GOVERNMENT OF INDIA
MINISTRY OF TOURISM & CIVIL AVIATION
(COMMISSION OF RAILWAY SAFETY)

REPORT

ON

THE WORKING OF THE COMMISSION OF RAILWAY SAFETY

FOR

1982-83

By
CHIEF COMMISSIONER OF RAILWAY SAFETY
LUCKNOW

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ACTIVITIES OF THE COMMISSION

Highlights

I. Statutory Inspections & Authorisations for opening to passenger traffic.	(a) New Lines	171·78 Kms	Chapter II para 2·1(c) Appendix A-1.
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	(c) Movement of over-dimensioned consignments.	157 nos.	Chapter II, para 2·4.
	(d) Running of New types of Rolling Stock on sections of railway where they were not in use	65 nos.	Chapter II, Para 2·6 & Appendix A-2.
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CHAPTER I

FUNCTIONS AND ORGANISATION OF THE COMMISSION

The Commission of Railway Safety deals with matters appertinent to safety in rail travel and operation and for this purpose performs certain statutory functions—Regulatory, Inspectional, Investigatory and advisory—laid down in the Indian Railways Act, the Rules framed thereunder and executive instructions issued from time to time. The Commission is under the charge of a Chief Commissioner of Railway Safety (hereinafter referred to as C.C.R.S.) with 7 Commissioners (hereinafter referred to as C.R.S.) in charge of Circles having jurisdiction over one or two zonal railways.

1.1 The Chief Commissioner of Railway Safety as the Head of the Organisation is the Principal Technical Adviser to Government in all matters concerning the Commission. He is assisted by a Technical Wing composed of Deputy Commissioners drawn from 4 major disciplines of railway working and a Deputy Commissioner (General) who also acts as the leave reserve officer. The Headquarter of the Commission is at Lucknow.

1.2 A brief narration on the History of the Organisation, its Functions and Responsibility and Creation of additional Circles and the Technical Wing, is contained in Annexure-I.

1.3 *Cadre* : As on 31st March, 1983, the cadre in the Commission of Railway Safety was as follows :—

At the Headquarters	
C.C.R.S.	Shri P. M. N. Murthy, B. Sc. (Hons), B. E., F. I. E. (Ind.) F. Inst. P. W. E. (Ind.), M. Inst. R. T. (Ind.), M. ASCE.
Dy. CRS (General)	Vacant
Deputy Cs. R. S. in the Technical Wing	
Signalling & Telecommunication (S & T)	Shri Vishwa Prakash, B. Sc., Grad. I. T. E., M.I. R. S. T. E. (Ind).,
Electrical Traction (ET)	Shri K. Bhojraj, B.E.
Mechanical (Mech.)	Shri M. C. Sinha, B.E.
Operating (Optg.)	Shri F. J. Correya, B. A., M. Inst. R. T. (Ind.)
Cs. R. S. and Deputy Cs. R. S. in the Circles	
Southern Circle, Bangalore	Shri K. Ganapati, B.E.
Western Circle, Bombay	Shri A. A. Rego, B.E.
Northern Circle, Lucknow	Shri Suresh Chandra, B. Sc., B. E. (Hons.), M. Inst. R. T. (Ind)., M. Inst. P. W. E. (Ind.)
Eastern Circle, Calcutta	Vacant (Additional charge held by Shri S. Subramanian)
South Eastern Circle, Calcutta	Shri S. Subramanian, B. E.
Central Circle, Bombay	Shri N. P. Vithal, B. E., A. M. I. E. (Ind.), F. Inst. P.W.E. (Ind.)
North Eastern Circle, Gorakhpur.	Shri K. J. N. Kutty, B.E.
Dy. CRS (S & T), Eastern Circle, Calcutta.	Shri J. Bhattacharjee
Dy. CRS (S & T), Western Circle, Bombay	Shri T. Janardhana Rao, A.M.I.E. (Ind.)

1.4 Jurisdiction

The route kilometrage in the Jurisdiction of each Circle on 31st March, 1983 was as follows :—

Name of Circle	Headquarters	Route Kilometrage*	Principal Railways.
1	2	3	4
Western	Bombay	10,293	Western
Central	Bombay	6,382	Central
Eastern	Calcutta	4,360	Eastern
South-Eastern	Calcutta	7,041	South-Eastern
Northern	Lucknow	10,975	Northern
North-Eastern	Gorakhpur	8,762	(i) North-Eastern (ii) Northeast Frontier
Southern	Bangalore	13,738	(i) Southern (ii) South-Central

NOTE :— In addition to the above principal Railways, the Commissioners exercise jurisdiction over the various Metropolitan Transport Projects and Company & Port Trust Railways located within their Circles.

*Includes Company and Port Trust Railways.

CHAPTER II

INSPECTION AND OTHER FIELD DUTIES

Inspection of New Lines

2.1 (a) The duties of a C.R.S. pertaining to the inspection of new railway lines including diversions prior to their being commissioned for passenger traffic, to the use of locomotives and rolling stock, and to electrification of lines are contained in the 'Rules for Opening of a Railway or Section of Railway for the Public Carriage of Passengers'. As per Railway Board's Notification No. 152-P of 1916, the Commissioners of Railway Safety exercise the powers of sanction under Sections 18 and 19 of the Indian Railways Act, 1890 for authorising such new works for traffic.

(b) With regard to the inspection of new lines, doublings, conversions, electrification and major works, it would be unreasonable to assume that the Commissioner of Railway Safety, by mere inspection of such works, can take upon himself, any part of the responsibility which rests squarely on the engineers who have supervised the progress of these works from day to day during the period of construction. At the time of inspection by a C.R.S., defects if any as noticed, are pointed out and remedial measures suggested.

(c) During the year under review, the Commissioners of Railway Safety carried out detailed inspection of new works to the extent below :

(i) New Lines	171·778	Kilometres
(ii) Diversions	15·580	,,
(iii) Doublings of sections	84·191	,,
(iv) Guage conversion	162·000	,,
(v) Initiation of electric traction	105·100	,,
(vi) Restorations	20·000	,,

A list of these works appears at Appendix A-1.

New Minor Works

2.2 Commissioners of Railway Safety are empowered to sanction new minor works affecting the running lines such as provision of new bridges, re-building or re-girdering of existing bridges, re-modelling of station yards, re-signalling works, alterations or renewals and other line capacity works which affect the operation of passenger carrying traffic. These works after being sanctioned are executed by the railway officers and opened under a safety certificate issued by them unless the C.R.S. decides to inspect them before they are commissioned.

2.2.1 During the year, the Commissioners of Railway Safety sanctioned 2,028 new minor works of the above type.

Works involving Infringements to Standard Dimensions

2.3 On the recommendation of the Commission of Railway Safety, the Railway Board sanctioned 27 applications for works involving Infringements to Standard Dimensions specified in the Schedules for Broad, Metre and Narrow Gauges. In addition, 26 Infringements were condoned by the Cs. R. S. under their own powers, bringing the total to 53.

Movement of over-dimensioned consignments

2.4 Various types of heavy machinery, which infringed the maximum moving dimensions, were transported on the Railways, many of them from or to the sea-ports. During the year, transport of 157 over-dimensioned consignments was sanctioned on railways by Commissioners of Railway Safety after due scrutiny subject to such conditions or speed restrictions as were deemed necessary.

Periodic Inspections

2.5 During the year, the Cs. R. S. carried out periodical inspection of 2,293 Kms. of Government Railways in company with the General Managers concerned. In addition, they carried out tour inspections of Government Railways to the extent of 8,202 Kms. They submitted reports of their inspections to the Chief Commissioner of Railway Safety who in turn forwarded them to the Railway Board for appropriate action. Significant defects noticed during the inspections were discussed at site with the railway officers concerned and copies of inspection reports were also furnished to the General Managers of the concerned zonal railways to ensure prompt remedial measures.

New types of locomotives and rolling stock

2.6 On the recommendations of the Commission of Railway Safety, the Railway Board accorded sanctions to the runnning of 24 new types of locomotives and rolling stock during the year under review, including the operation of such locomotives and rolling stock on routes other than where they were already in use. The Cs. R. S. under their own powers issued 65 sanctions (including trials) for the running of some types of locomotives and rolling stock on the Railways in their jurisdictions over those portions where they were not in operation till then.

A list of locomotives and rolling stock sanctioned for operation during the year is at Appendix A-2.

CHAPTER III

INVESTIGATION INTO ACCIDENTS

3.1 Incidence of Accidents

(a) The number of accidents which occurred in 1982-83 as advised by the Railway Board on the Government Railways including those reported under Section 83 of the Indian Railways Act, 1890, are given in the table below :

Sl. No.	Railways Government Railways	No. of Accidents 1981-82	No. of Accidents 1982-83	No. of Accidents under Section 83 of the Indian Railways Act. 1981-82	No. of Accidents under Section 83 of the Indian Railways Act. 1982-83
1	2	2	3	4	5
1.	Central	3398	3424	66	48
2.	Eastern	1723	2173	40	39
3.	Northern	1817	1731	63	59
4.	North Eastern	918	950	51	17
5.	Northeast Frontier	428	597	96	129
6.	Southern	735	427	37	28
7.	South Central	1263	1014	56	37
8.	South Eastern	3831	3370	98	70
9.	Western	1156	1093	38	29
		15269	14779	545	456

The figures in the table do not include such occurrences as persons falling out of trains, persons run over and injuries to station or line staff.

(b) The incidence of train accidents on Government Managed Railways, including those under Section 83 for the period from 1972-73 to 1981-82 and for the year 1982-83, is shown in the following table :

Sl. No.	Category	1972-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Collisions	59	66	66	64	45	54	55	72	69	87	54
2.	Derailments	598	578	696	768	633	705	778	692	825	936	653
3.	Collisions with road vehicles at Level Crossings	131	125	140	105	86	93	86	115	90	84	70
4.	Fires in Trains	25	13	23	27	16	14	12	21	29	23	20
		813	782	925	964	780	866	931	900	1013	1130	797

NOTE:— During 1982-83 there has been a substantial reduction in train accidents as compared to the previous years in all the categories.

3.2 Regulations

3.2.1 The Rules for the guidance of the officers of the Commission of Railway Safety for holding inquiries into Railway accidents are contained in the "Statutory investigation into Railway Accidents Rules, 1973" notified by the Ministry of Tourism and Civil Aviation.

3.2.2 According to the requirements of "The Railway (Notices of the Inquiries into Accidents) Rules, 1973" notified by the Ministry of Railways (Railway Board), all accidents as described in section 83 of the Indian Railways Act are reported.

3.2.3 The nature of accidents that have to be reported to the Commission under section 83 of the Indian Railways Act, accidents into which "Statutory Inquiries" have to be carried out, the rules and procedure for statutory investigations and their scope are set forth in Annexure-II.

3.3 Statutory Inquiries Held in 1982-83

3.3.1 During the year, 21 accidents were inquired into by the officers of the Commission of Railway Safety. These are listed in Appendix B-1. Of these, 11 were cases of Collisions between trains, 4 of Derailments, 4 of Collisions between trains and road vehicles at Level Crossings, 2 of Fires in trains, 3.3.2 In this period, inquiries into 6 accidents were entrusted to Railway Administrations in terms of Rule 2.5 of the "Statutory Investigation into Railway Accidents Rules", on account of heavy work load in the Commission. These are listed in Appendix B-II.

3.3.3 A brief account of the accidents inquired into by the Commission during 1982-83 is given below, along with important Recommendations/Remarks made in the Reports on these accidents :—

1. Collision between 1Dn. Gauhati-Bareilly Express and a tractor at a level crossing at Kurraiya Station on the Mailani-Pilibhit Section of the N. E. Railway on 1-4-1982.

Casualties : Killed—2; Injured (Simple)-1 (Occupants of the Tractor)

Cause : Level Crossing Gate not properly secured against road traffic.

Recommendations

1. The gates may be locked say with E. Type locks which will release the key to be handed over to the Station Master for trailing end and to be transmitted or inserted in the Home signal post at the facing end. The station master can thus be sure of the gates being secured.

2. In the Station Working Rules, effective from June 1980 the level crossing at Mailani end has been shown as unmanned whereas, in fact this gate is operated by the Pointsman. The mistake should be rectified and as to how such error arose may be investigated.

3. The provision of S. Rule 187 (11) (K) (ii) may be brought to the notice of the staff of stations similar to Kurraiaya for implementation.

The Railway Administration should take effective steps to ensure that the full complement of staff as specified in the Working Rules are available to work stations. If working with a reduced complement is inescapable, procedures for such working should be specified in the Working Rules. The system for arranging relief should be reviewed and action taken to ensure the presence of full complement of staff at stations.

5. As many as 40 vacancies were there in the Izzatnagar division on 31-12-1982. The position in other Divisions seems to be still under review. Effective prompt action is necessary to recruit, train and man these posts without delay.

6. Non-interlocked level crossings may be kept normally closed for road traffic unless there is an adequate system for the Station Master to be satisfied that the gates are closed and locked.

7. The U. P. Motor Vehicle Rules may provide that public service vehicles stop before crossing the Railway Track even at manned level crossings with open gates. Such a rule is prevalent in other states e.g., West Bengal and Andhra Pradesh.

8. In the rural areas of U. P. number of tractors used for agriculture and allied purposes is increasing. Drivers of these are generally not professionals. A suitable publicity campaign targeted at this class of drivers about the precautions to be taken while passing through a level crossing should be done.

9. The standard drawing for level crossing gates may be reviewed and necessary alterations made to ensure effective locking.

10. For the level crossing operated by the Traffic Deptt. the P. Way Inspectors do not appear to be recording notes of their inspections done during maintenance. A level crossing book should be maintained by the Station Master in which the Engineers may record their entries.

11. REAR-END Collision of 102 Dn. Kathgodam-Kasganj passenger with runway coaches between Kathgodam and Haldwani Stations on the Izzatnagar Division of North Eastern Railway on 20th April 1982.

Casualties : Killed—2; Injured-Grievous—6
Simple—1

Cause : Coaches left on a running line without being properly secured, escaping into the Block Section behind the departing train, before points could be set back for the slip siding.

Recommendations

1. Provision of audible warning of reverse slip siding points may be arranged without further delay. Electrical transmission of the Key Interlocking the Block Instrument with the slip siding points may be provided to replace the manual mode. Railway Administration should set up a proper system to ensure that such essential works are pursued till implementation. The Railway Board should also review the position on all Railways.

2. The Working Rules, of the station which is at the summit of a gradient of 1 in 70, need elaboration specifying the duties of all staff involved for securing vehicles.

3. The Working Rules may emphasize the need to reset the slip siding points, immediately after the intended move is over, designating staff for this purpose.

4. Railway Board in their letter No. 75/Safety-(A & R)/29/11 dt. 16-7-75 had issued instructions that sprag and wedges of approved design should be provided. This has not yet been done on the N. E. Railway.

5. The gradient in the station yard is at places, steeper than what is shown in the drawing (1in 400). A survey should be undertaken at all such stations and wherever there are infringements, the railway should propose to rectify by seeking special sanction.

6. Once again shortage of yard staff was noticed. Proper working cannot be ensured unless full complement of staff is available.

7. IRS steel bodied coaches not being anti-telescopic, the marshalling instructions should stipulate ICF|BEML|IRS steel bodied coaches in that order of preference.

III. COLLISION of Dn. Empty Box special goods train with loaded Motor Truck No. MPD 5749 at 'A' class manned level crossing No. 116 at Km. 231/4-5 on twin single line no. 1 between Bairagarh and Nishat pura 'D' block cabin on the Ujjain-Bhopal BG section of the Western Railway on 25th April 1982.

Casualties : Killed— Injured—2 (Occupants of Motor Truck)

Cause : Down Empty Box special entering the level crossing when its gate was open to road traffic.

Recommendations

1. A warning bell actuated by the approach of a train should be provided at this important mid-section level crossing. The arrangement should be such that the warning bell should sound not only when the gate signal is at 'ON' but also when the gate signal is 'OFF' initially but is replaced to 'ON' when the train is approaching to the level crossing.

2. The design of winch operated lifting barriers should be modified to permit a time delay at the commencement of the opening opertion.

3. The visibility conditions at level crossing No. 116 need to be improved.

4. The system of exchange of private numbers with Bairagarh station should be checked for improper working.

5. The local civil authorities should be approached to improve lighting near the level crossing, provide rumble strips at the approaches and a caution board on the Bairagarh side approach.

6. Clear orders should be given regarding type of examination that the TXR is required to do to a goods train. The TXR certificate and the vacuum brake certificate should indicate the type of C & W examination, that was done. A uniform practice should be evolved for all railways.

7. The Railway Board may review and specify the maximum distance that through goods trains can be run without intermediate examination. Pending the same, the limit of 800 to 1000 Kms. mentioned in Member Traffic's d. o. letter No. 78M(W)|814|8 Vol.II dt. 1-10-80 should be enforced.

8. As long as end-to-end running is permitted, TXRs carrying out intensive examinations of such brakes should be held accountable for all C & W defects that are noted during the run.

9. All Railways may be asked to issue rationalisation charts of C&W examinations specifying the stations and prescribed standards of C&W examination to be given for each stream of Up and Dn. goods traffic.

10. The implementation of Board's directive contained in MM's D. O. No. 80|M|(L)|814|39 dt. 7-8-81 by the Railways should be expedited.

11. The recommendations of the Directors Mech. Engineering and Traffic Transportation, for the preparation of All Indian Train Examination Schedules for inter railway freight trains and distinctive train numbering of all trains is commended for immediate implementation.

12. Clear directive should be issued for gang strengths required for intensive, originating and safe-to-run examination.

13. Completed Private Number Books used at Engineering gates should be sent for record to the AEN and not to T. I.

14. Schedules of minimum surprise inspections to be carried out particularly at night at all Engineering level crossings should be specified for Inspectors/Officers of the Engineering Department.

IV. HEAD ON Collision between 13 UP Rangiya-Tezpore Express and 14 Dn. Tezpore-Rangiya Express between Dekargaon and Tezpore stations on the Rangapara North Jn.-Tezpore sec. of N.F. Railway on 8th May 1982.

Casualties : Killed-3; Injured-9

Cause : Both 13 Up and 14 Dn. were despatched into the same Block section without correct Authority to Proceed'.

Recommendations

1. The procedure for obtaining line clear, when Block Token Instruments are out of order, needs review.

2. Supervision at the level of Inspectors and Operating Officers of stations such as Dekargaon needs to be improved.

3. The ASM Dekargaon has been all the time on night duty for the last 5 years. This seems to be the case at many other stations. The Administration may consider rotation for such staff.

4. The casualties in this accidents occurred in a wooden bodied SLR which was 2nd from the engine. There appears to have been an error in the translation into English from Hindi the contents of Railway Board's letter regarding marshalling instructions the Hindi version may be suitably amended.

V. COLLISION between MBE Dn. Goods and No. EG-18 Up Suburban Local trains at Gummidipundi station on Madras-Gudur B.G. Double line Electrified section of Southern Railway on 3-6-82.

Casualties : Killed—9; Injured—26

Cause : The Goods train having been driven past the Dn. Home signal at 'ON' position.

Recommendations :

1. The layout of Gummidipundi yard is peculiar in that the path of an out-going up Suburban local

cuts across the path of a 'Down' train. It is therefore, considered that the normal block over lap of 180 meters for the down home signal is not adequate as this unfortunate accident has proved. Minimum overlap of 400 mts. may be provided at this and similarly placed stations.

2. Close surveillance by higher categories of Supervisors to be ensured by conducting surprise checks of goods trains at a convenient point soon after their departure from the originating train examining depot after examination, to serve as a feedback information to the Railway Administration about the quality of the performance of train examiners.

3. Ministry of Railways may consider reviewing their orders about keeping wagons in service "for any length of time irrespective of their Return date" if they are found fit for service "on normal train examination" and issue such revised directives as may help in promoting safety.

4. Power failures in Route Relay Interlocking installations not be allowed to interfere with the digital counters meant for cancellation of routes. Time-relays to be made to function as designed for and release a route in less than the prescribed time limit.

5. The design of colour light signals to be modified such that there won't be any flickering of signal aspect under any circumstances. In Colourlight Signals on Southern Railway, the next more restrictive aspect is cut in when the main filament of a bulb fuses with the possibility of two or more aspects simultaneously being displaced on the signal, confusing the Driving crew. This deficiency has to be removed.

6. Southern Railway Administration may seriously view the practice of cannibalising the fittings of wagons due to short supply of spares at Train Examining Depots and take such steps as would help in getting over the problem in the interest of safe train operation.

7. Southern and South Central Railway Administrations may ensure that their Driving crews posses the relevant Rules Books and Working Time Tables of both the Railways when working trains in each other's jurisdiction.

8. Non compliance of Railway Bd's instruction of 1977-78 regarding exchange of private numbers between the gateman and ASM was brought to the notice of the Southern Railway administration in previous accident report (Triple collision of 11-2-81). Despite the assurance given at that time it was again seen that in respect of Level Crossing No. 33 within Gummidipundi station limits there was no exchange of private numbers. There seems to be a considerable gap between order and implementation perhaps due to lack of enforcing supervision. Necessary steps may be taken.

VI. DERAILMENT between Narayanpur and Thana Bihpur Jn. station on the Barauni-Katihar Section of 3 Dn. Assam Mail on North Eastern Railway on 20-6-82.

Casualties : Killed—11; Injured—47

Cause : Speed in excess of that prescribed for the track.

Recommendations :

1. Time taken by trains in Block section to be maintained in terms of Board's letter No. 80|Safety (A&R)/1/20 dated 28-6-82 considering temporary speed restrictions.

2. Review of Speed restrictions and assessment of unserviceable wooden sleepers, and issue of instructions for extensive 'casual' renewal of sleepers.

3. Revision of Time-Tables, if speed restrictions of long duration are imposed.

4. Proper provision and lighting of speed restriction boards.

5. Scheduled inspection of track by Senior Officers from Head Quarters.

VII. COLLISION between 978 Dn goods train and 4 SL passenger train at Bandhua Kalan station on Lucknow-Sultanpur section of Northern Railway on 28-6-82.

Casualties : Killed—2; Injured—25

Cause : Disregard of signals.

Recommendations :

1. Although the position of 978 Dn. goods train was substantially altered by the addition of 16 wagons the train was neither submitted to examination nor was any revised Brake Power Certificate issued even though it had covered about 323 Kms. The procedure should be rectified.

2. The train was named as Dn. E/Box when it started from Khanalampura but on the Lucknow division the nomenclature was changed to 978 Dn. goods. In some records it was shown as 976 Dn. Similar goods was brought out in the accident report on 163| Up Sangam express (accident of 13-10-80). Such changes caused great confusion and result in shipping of trains examination.

3. Provision of 'One-Slot-One-train' and One-Slot-One-Starter on the section may be considered in view of heavy movement of trains falling each other in the section. If this is not considered justified at all stations, it may be provided at stations where the visibility of signals is restricted due to curves or other local features.

4. A suitable permanent speed restriction may be imposed beyond the Dn. distant signal of Bandhuakalan due to visibility of the Home Signal being restricted by the curve.

5. Irregularities in transactions of private numbers by train passing staff should be checked by the inspecting officials.

6. Shortcomings in the level crossings indicated in the accident report may be rectified.

7. Even though 4 SL was a short distance passenger train, since the SLR had been provided it should have been marshalled in the rear of the train instead of 2nd from the rear to provide safety marshalling.

VIII. COLLISION of light Engine No. 17998 WDM-2 with 2 CCM passenger train at Agori Khas station on Chunarhopan section of Northern Railway on 29-6-82.

Casualties : Killed—4; Injured—14.

Cause.: Defective brakes of the light engine.

Recommendations :

1. Recruitment policy for diesel/electric drivers should be reviewed so that in due course only technically qualified staff are appointed.

2. Initial Refresher Course should be arranged after one year of being appointed as a Diesel driven and subsequent Refresher Course may continue to be over 3 years. It is also necessary that the courses are conducted as per schedule. In the first year monitoring by loco Inspectors on the line should be frequent.

3. Newly appointed Diesel Drivers should be permitted to work in Ghat Sections only after two years experience in other sections.

4. The Railway Administration should ensure that staff have the necessary training and possess valid competency certificates before being booked.

IX. COLLISION of 54 Dn. Himachal Express with D-51 Up-goods train at Rupnagar station on Delhi Division N. Rly. on 6-8-82.

Casualties : Killed—Nil; Injured—2.

Cause : 54 Dn. being driven past reception signals in 'ON' position and shunting of goods train having been suspended before granting line clear for 54 Dn. Express train.

Recommendations :

1. A trip for refreshing the knowledge of the section should be given after an absence of 3 months or more from the section. After an absence of two years or more the crew should learn the road like any other new staff by making 3 trips for the purpose before being allowed to work trains on the section.

2. Strict compliance of GR 255 should be ensured by suspending shunting beyond the Home Signal before granting line clear for a train.

3. Synchronisation of vacuum and steam brakes on engines needs to be ensured.

4. Stock overdue POH should not be attached to Mail/Express trains.

X. COLLISION between 9 AK Passenger train Bus No. PBA-7883 at manned Level Crossing No. 30-B between Jandoke and Taran Taran station on Khemkaran-Amritsar section of Northern Railway on 11-9-82.

Casualties : Killed—34; Injured—21.

Cause : Level crossing gates not having been closed in the face of an approaching train.

Recommendations :

1. Keeping in view the heavy road traffic and the local features such as inadequate visibilty due to the curve, the level crossing No. 30-B should be protected by gate signals interlocked with stations.

2. The working instructions for the level crossing indicated lifting barriers, gate signals, and level frames having been provided, although none of these arrangements existed at the gate when the accident occurred. The telephone connection which was existing was not mentioned in the working instructions. Such carelessness on the part of the concerned officials should be worked into and the position checked at other places also.

3. Proper registers for recording the transactions between the station and the level crossing had not been provided at the gate. This should be done.

XI. DERAILMENT of 11 Up Barak Valley Express between Katakhal Jn. & Calchapra stations on Badarpur Jn. M.G. Section of Northeast Frontier Railway on 4th September, 1982.

Casualties : Killed—Nil; Injured—24.

Cause : Spread of gauge.

Recommendations :

1. In view of the relative lack of experience of Officers on the Division on the Railway and the presence of long lengths of track overdue renewal in the context of shortage of materials/funds, it is considered necessary that officers of the rank of Additional Chief Engineer inspect the track periodically. A system of monitoring of track inspections of the various levels should also be enforced.

2. There should be a review of working Time Tables and revision of minimum running times where required, taking into consideration permanent speed restrictions.

3. Inspection and repairs of Passenger carrying coaches to prevent those with rejectible defects being present in running rakes, should be ensured. Test/Inspection by officers of rakes certified fit to run by the Train examiners is necessary.

4. On the Lumding division indicators installed at locations of temporary speed restrictions are not being lit at night. This may be done in a suitable form.

5. The train involved in the accident was running with a single SLR although Mail/Express trains must have 2 SLRs. Until such time SLRs are available in sufficient numbers, other coaching vehicles fit for Mail/Express service, may be marshalled immediately behind the engine when such trains have to run with a single SLR (which will be rearmost).

6. It is necessary that all diesel locos are fitted with effective speed recorders unless Railway Administration is able to nominate Diesel locomotives for Mail/Express trains.

7. Engineers should be kept free from extra general duties if such duties come in the way of adequate inspection and maintenance of track.

8. It would be feasible to confine vehicle and trolley inspections to the Senior PWIs and directing the Junior PWIs to supervise gang-work and execution of special works.

9. Action should be taken to ensure sufficient working strength of permanent way gangs.

XII. OUT BREAK of fire in YFYS coach No. 72438 of T-171 Dn. Bombay VT Thane Local train at Kanjur Marg station on the 1500 V. DC electrified quadruple line broad gauge section of Central Railway Bombay Division on 2-10-1982.

Casualties : Killed—Nil; Injured—Nil.

Cause : Sabotage.

Recommendations :

1. Intensive drive through GRP/RPF, and publicity should be made to cope up with menace of wilful destruction of railway property.

2. Recovery of the loss directly as well as indirectly through the levy of temporary surcharges on tariff or the raising of debits against the City/State concerned may be given consideration.

XIII. COLLISION of Up TKD special goods train with Bus No. DLP 162 at Level Crossing No. 4B (A Class) between Patel Nagar and Dayabasti station in Delhi area on Northern Railway on 29-10-82.

Casualties : Killed—3; Injured—5.

Cause : The train having been driven through the open level crossing.

Recommendations :

1. Train examination procedures should be strictly enforced.

2. Caution orders should be correctly issued.

3. Station Working Rules should be prepared properly to indicate the position correctly.

4. Rolling stock over-due POH should not be continued in service beyond the return date.

XIV. Accident to 6 Dn. Amritsar-Howrah Mail at Km : 15/14-12 on Dn. line of Dankuni station on Barddahaman-Howrah Chord line Electrified section Howrah Division of Eastern Railway on 2nd Nov. 1982.

Casualties : Killed-Nil; Injured-4

Cause : Passing Home Signal at Danger.

Recommendations :

1. The comments made in the report regarding the Operating staff may be given due attention.

2. The signal over-lap of Dn. Home Signal 36 W of 3rd line at Dankuni station may increased to 300 meters by shifting the signal to improve the element of safety.

3. Other remarks in the report regarding Signalling system may be locked into.

4. Eastern Railway may provide a 'slot' system for the route in the signalling circuitory to ensure, cabinman cannot receive a train by changing a route in the face of an approaching train.

5. The 3 level crossings mentioned in the report being on busy electric suburban section may be provided with full interlocking.

6. Comments made regarding non-functioning of speedometers light punishment to the running staff etc. may be looked into.

7. While retirement age of 58 years appears suitable for office posts and others which generally do not require a great amount of physical alertness ness, the same cannot be said about Engine drivers on the footplate, whose alertness should be of a high order. With this background Railway Board may undertake studies of accidents caused by drivers with reference to age and if the results show that aged drivers are more prone to accident the Board may like to review the policy about the retirement age of drivers.

XV. COLLISION of 5 Up Howrah-Rourkela Exp. with the parted rear portion of Up Electric Bondamunda Special Goods train at Km. 378|15-17 between Manoharpur and Jaraikela stations on the Rourkela-Chakaradharpur double line Electrified Board Gauge section of Chakradharpur Division of South Eastern Railway on 2-12-82.

Casualties : Killed-9; Injured-44

Cause : Due to 5 Up Express train having been admitted into the block section between Manoharpur and Jaraikela stations on valid authority while the section was still blocked by the parted portion of the proceeding goods train E|BNDM Special.

Recommendations

1. Railway Board to lay down a time bound programme for installation of Last Vehicle check devices.

2. A suitable device should be evolved for fitment in the WAM-4 locos in multiple consist working with 2 exhausters for detection of small changes in vacuum occurring when the guard's emergency brakes are applied or when there is train parting.

3. The Railway should re-examine the adequacy of the screw couplings and takes steps to limit the trailing load on graded sections for conventional stock with screw couplings on the basis of 22.5 tonnes draw bar pull.

4. Earnest efforts should be made by the Railway Board to introduce radio-communication between trains and station|control.

5. To examine strengthening of body and underframe of WAM-4 locos to improve the crash resistance of such locos during accidents.

6. The Railway should take strong action whenever short-cut methods are adopted by the station staff while doing train passing duties.

XVI. HEAD-ON Collision between 6 Dn. Kamrup Express and 7 Up Tinsukia mail at Diphu station on Mariani Jn-Lumding Jn. M. G. section of Northeast Frontier Railway on 9th Dec. 1982.

Casualties : Killed-1; Injured-5

Cause : Disregard of the Dn. Home signal by the driver of 6 Dn. Kamrup Express.

Recommendations :

1. The Station Master and Permanent Way Inspector did not come to the accident site even though they were nearby. They should be taken up.

2. The maintenance of records at the station is far from satisfactory. Staff were overdue refresher course. Cabinman, Pointsman and ASM's were working without valid competency ctrtificates. This needs to be checked.

3. The 'B' class level crossing should be interlocked without delay. In the meantime exchange of private numbers should be introduced.

4. The post of D.S.O. was not in operation for about 11 months. Situation in other division may be similar. If the Railway Administration is serious about safety such a condition should not be prevalent.

5. The operation of signals motors with overhead alignment should be converted to cable system at an early date.

6. Lighting of Speed Restriction Board was given up for want of Chaukidar's and consequently lamps being stolen. Suitable arrangement should be made to ensure that Railway Board's instructions are implemented.

7. The Brake Power on the trains was not adequate specially on 6 Dn. and the certificate issued by TXRs were not based on facts. Trains certified fit to run by TXRS should be test checked by Inspectors/ Officers.

8. The Diesel Locomotive of 7 Up had not been over hauled since Commissioning in 1975. This should be checked.

9. In view of the result of the study by RDSO on the subject it is desirable to ensure that a driver suffering by diabetes who needs drugs to control it, is not certified fit to drive trains. The Railway Board had issued guidelines in 1974 but the C.M.O. of the Railway had stated that it is left to the discretion of the examining Medical Officer to use his judgement. It is felt that an update order should be issued by the Railway Board. It is also recommended that the examining Medical Officers are made aware of the applicable instructions on the subject.

10. A specific study should be made to determine whether there is a case for lowering the maximum age limit for drivers. In the meantime it is recommended that the review, after completing 30 years of service or reaching 55 years of age must take into account in the case of drivers, the results of special Medical Examination and tests devised by RDSO.

11. In order to mitigate hardship to drivers found medically unfit, proposals such as group insurance for drivers may be considered. Such an arrangement may help in a more positive attitude on the part of the drivers towards medical fitness.

12. Recruitment and promotion policy for drivers and categories from which they are selected may be reviewed and amended as required to reduce the average age so as to make available a larger portion of comparatively younger group to serve.

XVII. COLLISION between 10 Dn. Howrah-Jagannath Exp. and 219 Up Puri-Waltair passenger at Km. 455/13-14 at the South end of Khurda Road station yard on Kharagpur Waltair Broad Gauge Double line section of Khurda Rd. division of South Eastern Railway on 15th Dec. 1982.

Casualties : Killed-Nil; Injured-9.

Cause : Due to 219 Up Passenger being started from Khurda Rd. station despite the departure signals lowered earlier having been put back to danger a few minutes before the actual departure of 219 Up with the resultant collision with 10 Dn. Express which was admitted on valid authority into Khurda Rd. station.

Recommendations :

1. (a) Railway should ensure observance of provision of SRI 36/3(a) 2nd para requiring the issue of a written memo to the Driver of a train whenever the signals lowered for it are put back.

(b) Instilling of safety consciousness among the railway men had to be vigorously fostered by the higher echelons of the Railway Administration by creating the impression that transgressing of rules involving safety of train movements would attract swift action from the top.

2. Railway may consider whether the interlocking in the South cabin of Khurda Road could be suitably modified to ensure that before setting the route for admission of a Dn. train from Puri branch line, point No. 40A is set reverse to prevent such accidents occurring in the future: may review similar layouts of other junction stations for provision of such physical isolation measures.

3. SWR of Khurda Rd. permits simultaneous reception of trains though there is no isolation at the station. Provision of Railway Board's letter No. 69/ Safety/29/8 dated 16-6-69 that physical isolation of lines is a must for simultaneous reception of trains should be strictly followed. Railway should conduct a review at all similar stations.

4. The Railway may devise steps to detect cases where the driver consumes alcohol after presenting himself for the breathalyser test in the loco shed so

that he could be taken off the foot-plate of the locomotive if found to be under the influence of liquor at the time of starting his train.

XVIII. FIRE Accident of 1 GGC (Gomoh-Garwa Rd.-Chopan) passenger train between Mahuariya and Dudhinagar station of Eastern Railway on 27th Dec. 82.

Casualties : Killed-1; Injured-4

Cause : Electrical fault.

Recommendations

1. The work of conversion to 110 V in coaches needs to be done in a proper and systematic manner, in order to prevent any loose hanging wires which may cause fire hazards.

2. Electrical Department to ensure use of properly crimped lugs in making electrical connection.

3. Clear instructions to be laid down that traffic staff should advise electrical staff to disconnect electrical couplings before attaching or detaching any coach.

4. Railway may examine whether there is any insufficiency in the infrastructure provided at Chopan for the electrical maintenance of rakes and take steps to make good the insufficiency if any.

XIX. HEAD-ON Collision between 251 Up passenger and Dn. Emergency special between Hatiali and Dikom stations on Tinsukia-Dibrugarh Town metre gauge section of N.F. Railway on 28th Jan. 1983.

Casualties : Killed—3; Injured—7

Cause : The passenger train being allowed into the Block section in violation of prescribed procedure and being driven at a speed significantly in excess of that prescribed.

Recommendations

1. Staff may be drilled in Rules to be implemented during emergency.

2. Wireless Communication Equipment may be kept available at Jn. for use during total interruptions.

3. Feasibility of introducing interface systems to permit "Wireless Working" of Token Instruments may be examined.

4. Railway Board's guide lines for Medical Examination and Certification of employees may be enforced.

XX. COLLISION of H.292 Dn. Haripal Local with B.114 Dn. Bandel Local between Liluah and Howrah stations in the Howrah Division of the Eastern Railway on 16-3-83.

Casualties : Killed—17; Injured-Grievous-47
Simple-44

Cause : The Motorman of H.292 Dn. not having exercised great caution after passing Automatic signal No. 2A|2 in the 'ON' position and failing to adhere to the speed limits laid down.

Recommendations

1. Railway Administration to take determined action to improve visibility of signals in Howrah yard and at Serampore by erecting signal gantries and repeaters where required. Converting Automatic signal Nos. 2A/2 & 1A/2 into semi-automatic signals with 'A' markers getting lit only if the section ahead is clear may also be examined.

2. Railway to ensure that no overdue POH EMU stock are used in regular service. Necessary infrastructure to be built up at Kancharapara Workshop to cope with the arrears of POH of EMU stock.

3. Railway Board may instruct the RDSO to reexamine the possibility of modifying the design of ICF stock to strengthen the floor structure of EMUs.

4. Steps to be taken for immediate extension of AWS with fibre glass housings of track side installations to all suburban sections in the first instance.

XXI. DERAILMENT of No. 25 Up Trivandrum Central-Bangalore City Express at Karunagapalli station yard on Trivandrum Division of Southern Railway on 21st March 1983.

Casualties : Killed—1; Injured—16

Cause : Poor condition of track and Mal-adjustment in locomotive.

Recommendations

1. Southern Railway to issue instructions for recording properly details of all pit line examinations in a register with check list.

2. Standard drawing for rail guard of cow catcher with bolt fitment to be finalised.

3. R.D.S.O. to issue proper guidelines for investigating Diesel locos with considerable biased wear.

4. PWI's to record wear and profile of the rails on curves periodically and the Head office to ensure this.

5. Better track standards should be maintained on curves where rails are worn considerably.

6. Limits of rail wear not to exceed those given in the Manual of the current track standards on curves.

7. A study should be made about the adequacy or otherwise of the current track standards on curves.

8. Large scale sleeper renewals should be done under Block Protection in terms of paras 1503 and 1504 of IRWWM.

3.4 Incidence of Serious Accidents inquired into during the period 1972-73 to 1982-83

3.4.1 The comparative position of serious accidents inquired into by the Commission during the year 1982-83 and those of the preceding 10 years is indicated in Appendices 'C' and 'E'.

3.4.2 It would be seen from Appendix 'C' that the number of accidents inquired into has been at par with those in 1973-74 but much less than those inquired into in 1981-82.

3.4.3 The break-up of serious accidents under main categories in Appendix 'D' show that Collisions contributed to about 40% and Derailments to about 31% of the total accidents during the period 1972-73 to 1982-83.

3.4.4 The break-up of accidents by principal causes is at Appendix 'E'. It will be seen that human failure directly attributable to train-working and train-signalling staff continued to be the major signal factor in the causation of accidents. The percentage for 1982-83 was 57.3 as against 47.7 for the preceding 10 year period 1972-73 to 1981-82.

3.5 About 133 recommendations aimed at improving the element of safety were made by the Commission as a result of statutory inquiries into serious accidents conducted during the year. While a number of these recommendations have been accepted by the Railway Board/Railway Administrations, some are pending their consideration. The effective implementation of the suggestions put forth by the Commission is expected to significantly contribute in enhancing the standards of safety in rail operations.

3.6 Accidents enquired into by Zonal Railways

3.6.1 (a) Whereas the statutory inquires held by the Commission-cover only important accidents of a serious nature, other accidents falling under Section 83 of the Indian Railways Act are enquired into departmentally and the Railway Administrations send the proceedings to the Commissioners for review.

(b) In the year 1982-83 preceedings of 311 departmental enquiries into train accidents conducted by Committees of Railway Officers were received in the Circle Offices. These are listed category-wise and by principal causes in Appendix 'G'. A summary of some selected accidents is given in Appendix 'H'.

3.6.2 The Railway-wise and category-wise position of accidents under Section 83 of the Indian Railways Act for the last four year period viz. 1979-80 to 1982-83 is set out in Appendix 'F'.

It may be seen from the comparative statistics displayed in Appendix-'F' that there was some reduction in the number of Derailments on all the Railways except the Eastern and N.F. Railways during the year. The total for all the Railways was 231 as against 311 in the previous year. There was also a reduction in the total number of Collisions-41 against 61 in the previous year. The fire accidents were also less-17 in 1982-83 as compared to 23 in 1981-82. There were 61 Level Crossing Accidents this year as compared to 74 in the previous year.

3.6.3 (a) A study of Appendix 'G' which contains the cause-wise break-up of accidents under Section 83 of the Indian Railways Act enquired into by the Rialways, shows that about 25% of Derailments were the result of failure of mechanical equipment (such as failure of axle/journals, Roller berarings, break grear, tyres/wheels, coupling apparatus, suspension and bogie components); about 18% were due to failures or defects in Permanent Way, and about 14% due to mismanipulation by Driving Crew or due to excessive speed. As regards Collisions, 60% resulted from 'Passing of Signals at Danger' and other failures by driving staff. Want of circumspection on the part of road users contributed to nearly 88% of accidents at Level Crossings.

(b) The total estimated cost of damage to railway assets resulting from these accidents under Section 83 was nearly 4.68 Crores. (This does not take into account some of the accidents for which figures of damage have not been received from the Railways).

CHAPTER IV

4. MAINTENANCE OF RAILWAY ASSETS AND OPERATION

4.1 Pursuant to the acceptance of a recommendation made by the Raliway Accidents Committee 1962, the Chief Commissioner of Railway Safety is required to include in his Annual Report a general appreciation of the condition and maintenance of Railway assets, with special reference to safety in train operation. The reduction or otherwise in the incidence of consequential accidents is the index of safety in train operation in so far as the public are concerned and this has been dealt with in Chapter III. In this Chapter, an appreciation is given of the state of maintenance of assets having a vital bearing on safety based on the observations made by the Officers of the Commission during their periodic and other inspections.

4.2 Reports of Commissioners and Deputy Commissioners of Railway Safety in the Technical Wing of the Commission on inquiries into accidents and inspections of Open Line Sections, New Lines, Doublings, Gauge Conversions, Electrifications, etc., feature specific instances of shortcomings and high-light several departures from accepted practices and procedures. Some important observations contained in these reports which were duly communicated to the concerned Railway Administrations and the Railway Board are summarised below in broad outline.

4.3 The Permanent Way

A. *Formation* :— On the Kanpur Anwarganj-Farukhabad Section of the North Eastern Railway, the Grand Trunk Road runs for long lengths next to the track, mostly level with it; there have been cases of road vehicles coming on to the track and colliding with trains. Concrete kerbs are being installed at some locations; there is need for effective arrangements to prevent road vehicles encroaching the track and for drainage between the road and rail formations where side drains are absent.

On the Darjeeling Himalayan Railway, there were locations where, on the valley side, adequate shoulder width is not available and need protective measures like retaining walls. Side drains were reportedly being cleaned by the Public Works Department of the State Government (road and rail formation being common) but they have stopped this work since about 7 years and it is neglected.

B. *Curves* : *Realignment of curves on Nilgiri Mountain Railway on Southern Railway*

The curves on the rack section cover a length of 14.97 Kms. on which versines were recorded at 5m intervals on 10m chords over a length of 10.77 Km., involving in all 2.154 readings. Taking the maximum designed curvature as limited to 17½ degrees, an analysis of the versines recorded showed that at 72 stations the versines exceeded the designed curvature by over 20% and at 122 stations by 10-20%.

C. *Points and Crossings*

It was seen from the "Points and Crossings" register of P.W.I. Jarwal Road station on North Eastern Railway that the Assistant Engineer had not carried out the inspection of points and crossings, as required, during the previous one year after the new Broad Gauge section was opened for traffic.

D. *Ballast*

(i) Insufficient ballast was noticed on large stretches of relaid track on Gudur-Madras section of the Southern Railway.

(ii) The position of stone ballast in Vijayawada-Gudur section of South Central Railway appears to be very unsatisfactory. It was understood that over 1 lack cubic meters of ballast was required to be inserted to clear the current arrears and that at the average rate of 5 Kms. of pre-stressed concrete sleeper work being carried out by the Railway every month, another 5000 cubic metres will be required every month in the section from Ongole to Gudur. There are long stretches of track with pre-stressed concrete sleepers with inadequate ballast posing operational risks besides damaging the track structure. A massive efforts is called for to make up the arrears of ballast within the shortest possible time.

E. *Track Maintenance*

(i) Between Katakhal Jn. and Salchapra station on N.F. Railway on Badarpur-Silchar section (a) maintenance of track was not satisfactory (b) Gang strength was inadequate (c) Inspection by supervisory officials was not carried out as per schedule of inspection laid down.

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(ii) It appeared from some track works completed on Arakkonam-Renigunta section of Southern Railway that speed restrictions imposed for such works were being relaxed prematurely without giving due consideration to the consolidation of track or its fitness for high speeds. Similarly, large stretches of relaid track on Gudur-Madras section with inadequate ballast were noticed where speeds higher than warranted by their condition had been permitted. Such premature relaxation of speed restrictions is not in the interest of safety of trains and should be discouraged.

(iii) At Hublli Jn. on South Central Railway, the passenger running lines are provided with track circuits, but the maintenance of track is not satisfactory for the track circuits to function efficiently. Coal ashes are found dropped all over the yard on the track resulting in track circuits getting short circuited when coal ash gets wet with the slightest drizzle. The condition of track is particularly bad near the exit from workshop (37 T of A Cabin) & 26 T of B Cabin. The track should be cleared of coal ashes and clean ballast should be provided in sufficient quantity to reduce the leakage through ballast otherwise safety is endangered as staff will be tempted to adopt short cut methods to keep traffic moving.

(iv) As on 31-5-1982, there were still 827 rails with major flaws in Kazipet-Vijayawada section of South Central Railway. Expeditious steps are called for to replace these flawed rails.

(v) On Kazipet-Vijayawada section of South Central Railway, the running even at speeds of 50 to 60 km|h was unsatisfactory. The alignment is defective at many locations. It was stated by the Railway Officers that this was on account of defective thermit welding. Officers and staff may be suitably educated on all aspects of maintaining track laid with short welded rails. Specified equipment like rail thermometers were also not provided to the gangs.

(vi) On Phulera-Degana-Merta Road section of Northern Railway a total length of 50.6 Kms. is sanctioned for complete track renewal, the oldest sanctioned work pertaining to 1980-81. The work had not been taken in hand as track materials had not been supplied.

(vii) *Marwar station-run through line for the superfast trains, Western Railway.*

A speed restriction has been imposed in this yard on account of a diamond crossing. Uptil now all trains stopped at this station and speeds were very low. As the proposed super fast train will run through Marwar hereafter, the run-through line should be specially checked and brought up to the desired Main Line Standard for the run through speed.

The full requirements of Permanent Way material required for upgrading track for the running of the proposed superfast train have not been received by both Rajkot and Ajmer Divisions, particularly wooden sleepers for the Main Line end points and crossings. These should be arranged before the impending superfast service is started.

On a number of sections between Abu Road and Ajmer, joints are seen blowing and running low. Suitable measures like deep screening around joints and improving cesses where low may be taken after a proper survey of all bad mileages. The suggestions made to improve the trouble spots between Km. 602/6 and 606|6 where uneven settlement of track takes place during monsoon, vide item A1 of the Information submitted to the C.R.S. by the Ajmer Division should be expedited. It may be necessary to impose suitable speed restrictions on engineering account in this particular section during the monsoons till the remedial measures suggested are taken and there are positive indications that this trouble has been over come.

On the North Eastern Railway, at Km. 223 on the Kasganj-Fatehgarh Metre Gauge Section, keys were short (by as many as 27 keys on one panel of three rails welded together—Short-welded Rail—on CST-9 Sleepers). The Mate did not have a thermometer, or joggled fish plates and was not aware of precautions to be taken during hot periods and of the procedure to be followed in passing traffic in case of weld failure. Cotters on the CST-9 sleepers were not properly split; joints were out of square and wooden joint sleepers had only 2 dog spikes per rail seat.

On the Darjeeling-Himalayan Railway, there was no system in vogue for marking unserviceable wooden sleepers in track. Many worn rails were observed on curves; a gauge to be used by Permanent Way Staff to identify such rails will be useful. P & M lubricators were not functioning due to non-supply of lubricants. Check-blocks were missing at many level crossings.

4.4 Level Crossing

It was indicated in the Annual Report of 1979-80 and 1981-82 that there was no appreciable improvement in the standards of protection at level Crossings. Some shortcomings which came to notice are indicated below :—

(a) At manned level crossing No. 30 B between Jandhok and Taran Taran stations of Northern Railway the working instructions indicated lifting barriers, gate signals and lever frame, but none of these arrangements had been actually provided at the time of inspection. The telephone connection which existed was however not mentioned in the Working Instructions.

(b) At Level Crossing No. 116 between Bairagarh and Nishatpura 'D' Cabin on Western Railway, irregularities were noticed in the system of exchange of private numbers between the Gateman and A.S.M.

(c) At Interlocked Level Crossing No. 4 B between Patel Nagar and Dayabasti stations, various irregularities being indulged into by A.S.M. Dayabasti, in the exchange of Private Numbers came to notice. Similar negligence or carelessness on the part of staff came to notice at other places also.

(d) There are many 'C' Class manned level crossings in Barabanki-Gorakhpur BG section of North Eastern Railway where neither gate lamps nor the alternative specified in Railway Board's letter No. 70/W/LX/11 dated 27-5-80 (Carex Reflectors, luminous paint or Scotchlite) have been provided.

(e) *Level Crossing No. 2 'C' between Kalka-Taksal on N.G. Section*

The visibility of the trains coming from Simla side is not adequate. The work of interlocking the level crossing with signals has been sanctioned and should be expedited in view of the increasing traffic across the level crossing and the down gradient for trains from Simla side. Lifting barriers in place of leaf gates may also be provided along with the rest of the work.

(f) As per instructions issued by the Railway Board vide their letter No. 77/W3/SG|LX|2, dated 16-3-79, all level crossings on the Rajdhani routes covering Howrah-Delhi and New Delhi-Bombay Centest results of the cables as required in terms of Signal connected to the nearest station. The progress in this respect has been very inadequate and a large number of level crossings have not yet been connected by telephone communication.

4.5 Bridges

On Phulera-Degana section of Northern Railway, on Bridge No. 22 (10x22.40 M girders) at Kms. 24/5-11, the alignment on a 7.5 m chord was out by about 7 mm which is excessive. Several hook bolts were loose and the arrow marks indicated that they were not bolted in the correct position. Some wooden sleepers in one span of the bridge were badly damaged and unserviceable and needed replacement. On the Degana end approach, 8 sleepers out of 30 were checked and found loosely packed. Some joints on the bridge were jammed even in the morning hours.

4.6 Signal and Telecommunication

(i) At Agori Khas station of Northern Railway the lever frame of East Cabin was found last over-hauled in 1969.

(ii) At Dankuni station on Eastern Railway (a) test results of the cables as required in term of Signal Engineering Manual were not maintained; (b) Main cables at Dankuni have not been tested during the previous one year; (c) Insulation of 4 cables in West Cabin and 6 Cabled in East Cabin was found very low; and (d) 155 numbers of line relays and 11 numbers of track relays were overdue for over-hauling.

(iii) At the Hubli station of South Central Railway the Home Signal No. 50 of A Cabin was tested with route set for road No. 5. In all 16 lamps are lighted to make up the figure 5 to be displayed on the route indicator. However no arrangement had been made to maintain the current through the route lamp proving relay. In the absence of this, it was not possible to check correctly whether the route was being displayed correctly at the signal or not.

(iv) At Katpadi station on Southern Railway, the Signal Failure Registers maintained in both the East and West Cabins (BG) reveal a number of instances of signals going back to danger due to heavy storms. It may be checked if this situation is common to other stations. Although the failure is on the safe side, steps should be taken to resolve this problem.

(v) Many of the Distant Signals (colour light type) were dim. For example, the down Distant Signal at Khalilabad station on North Eastern Railway was not visible from a distance of three telegraph posts. The down Home Signal of Jagatbela Station and the down Starter for line No. 3 at Maghar station were seen unlit. More attention needs to be paid to the maintenance of Colour Light Signals.

(vi) Scrutiny of records at Basti station on North Eastern Railway indicated frequent failures of the Basti-Munderwa Block Instrument. The panel lamps proving correct setting and locking of points 1 and 3 became defective repeatedly in June 82 (4 times) before the relay was changed. Level of expertise of the maintenance staff needs to be improved. Inspections by Supervisors and Officers needs to be intensified.

(vii) Daund Junction— Central Railway—The Reception and Despatch Signals including Shunt Signals are provided with dead approach locking i.e., Signal lever once pulled can be put back to normal only after 120 seconds in case of main signal lever and 60 seconds in the case of Shunt Signal lever but the main signals No. 5, 56, 61 and 62 could be cancelled after a time delay of only 20 seconds instead of the stipulated 120 seconds. In 'A' Cabin a number of shelf type relays did not have arrangement to prevent tilting. At Cross-over points No. 19 (Pune end) when set for turn out, it was observed that the detection contacts were making even with a 5 mm test piece though the lock plunger was obstructed.

(viii) *Itarsi Route Relay Interlocking*—The counter reading for emergency release of routes did not have entries in the register provided against each use of cancellation of route giving brief reasons. Even the Signal Inspector did not adhere to this system and used a group of entries showing 'testing' against the entries.

(ix) On Jaipur and Ajmer Divisions of Western Railway, out of 60 stations between Jaipur and Palanpur (both inclusive) there are 38 stations and 11 LCs (excluding Ajmer and Palanpur) provided with lower quadrant signalling which are yet to be replaced by MAUQ/MACL signalling. To make the situation worse, these stations are haphazardly mixed up with stations where MAUQ signalling has already been provided. Further, only 3 stations have been proposed for provision of MAUQ signalling in the 1982-83 Works Programme but these too have been deleted in the Pink Book. This needs looking into.

(x) At Marwar 'B' Cabin no Warner has been provided on the Outer Signal for trains coming in from the Jodhpur (Northern Railway) side. However on the Up and Down Western sides, Warner signals exist. It is desirable to have uniform signalling arrangement on all 3 sides while approaching the station. A fixed Warner signal may there fore be provided for trains approaching from Jodhpur side since all trains stop at this Junction station.

At Marwar, track circuit indicators are also not provided with white lights when tracks are not occupied as per Board's orders. It was stated that this work is being done in a phased manner according to availability of funds. Considering that this is an important MG junction station with approaches from four sides, the provision of lights for track indicators may be done on priority.

(xi) Harshinghpur Goba Station on the Farukhabad-Kasganj section of North Eastern Railway is interlocked to Standard-I while all other stations on the Section are to Standard III. It is desirable to upgrade this lone Standard-I Station to Standard-III.

4.7 Operation

Several features in train operation bearing on safety came to notice during the year, such as non-compliance with extant regulations and procedures by train working and train signalling staff; lack of supervision of stations and trains; staff not being deputed for periodical medical examination as well as periodical refresher courses on due dates; vacancies in train passing categories remaining unfilled resulting in staff working beyond normal duty hours, etc. Some specific shortcomings are indicated below :—

(i) The exchange of private numbers between ASM and Switchman has not been followed as specified at Jaraikela station on South Eastern Railway.

(ii) On South Eastern Railway, Khurda Rd. station working rules permits simultaneous reception even though there is no physical isolation.

(iii) Serious discrepancies were noticed in the Working Rules of Mailani station on North Eastern Railway.

(iv) At Level Crossing No. 33 within Gummidipundi station yard, there was no system of exchange of Private Numbers between the gateman and ASM although Southern Railway had assured earlier in this respect after an accident on 11-2-1981.

(v) At Bandhuakalan station of Northern Railway, the ASM and Levermen were found indulging in irregularities in the exchange of Private Numbers. They were in the habit of recording train passing transactions in anticipation of the actual movements.

(vi) At Dankuni station on Bardhhaman-Howrah Chord line of Eastern Railway, the Guard of 6 Down carried only one fire extinguisher instead of two. The assurance of 3 Shunting Masters had not been obtained for the revised Station Working Rules dated 16-7-82. One S.M., 6 ASMs, 2 switchmen, 3 Cabinmen, 3 Shuntmen and 1 Cabinman were found overdue refresher course. Three Cabinmen and one Switchman were found overdue periodical medical examination.

(vii) At Diphu station on Mariani Jn.—Lumding M. G. section of Northeast Frontier Railway, two ASMs, 4 Cabinmen, 2 Gatemen and 3 Pointsmen were found overdue refresher course and 3 ASMs, 3 Cabinmen and 3 Pointsmen were working without valid competency certificate.

(vii) At Nawa City station on Northern Railway, the Working Rule Diagram provided in the ASM's office indicated the existence of 2 unmanned level crossings (No. 20 & 22) at either end but they had not been shown in the Station Working Rules or the Rule Diagram attached with the SWR. The correct position should be indicated in all the plans.

(ix) As per Railway Board's orders, fusees are required to be supplied to the Guard, Driver, Pointsmen and Gateman in Ghat section. It was observed that the fusees had been supplied to the gateman but not to the other staff working in the Kalka-Simla section on Northern Railway. This should be ensured.

(x) Almost all the station yards on the Kalka-Simla section are on steep gradient but no slip sidings/catch sidings have been provided at any station. It may be checked up if this is on the basis of any special condonation by the Railway Board.

(xi) The Assistant Station Masters at Govindnagar, Tinich, Babhnan and Maskanwa stations on North Eastern Railway were not vigilant enough to notice that the last vehicle of Inspection Special train did not carry the LV Board although it had been removed at Basti station to test the alertness of ASMs.

(xii) On the North Eastern Railway, cases have come to notice of alarm chains being "blanked off" in Ladies' Compartments.

(xiii) Working Rules issued in 1967 for the Ghum station on the DR section of N.F. Railway were in use. At some stations Line Clear Reply message books were not available and the specified procedures for obtaining Paper Line Clear were not being rigidly followed. Vacancies of ASMs were reportedly persisting for more than three years.

4.8 Locomotives and rolling stock

(i) Many instances came to notice where the steam and vacum brakes had not been synchronised on steam locomotives.

(ii) Several instances came to notice where the speed recorder was not found to be functioning properly.

(iii) On Kalka-Simla section, the visibility for the driver when running with a long hood leading on a diesel engine is very much restricted. In view of the large number of curves on the alignment it would be desirable to run a diesel locomotive with short hood leading. The turn table at Simla is not capable of turning diesel locomotives and may be modified to enable such turnings.

(iv) Scrutiny of speed charts in Tuglakabad diesel Loco Shed in respect of High Speed trains worked by Northern Railway locomotives was not found to be satisfactory. As per the statement furnished by the Railway Officers' for the three months period from 1-3-1982 to 31-5-1982, out of 358 charts to be received, only 72 had been received and scrutinised as on 1-7-1982.

(v) It was seen that the copy of the "Brake-Power" Certificate available with the Guard of the Gorakhpur-Barabanki CRS Inspection Special of 10-7-82 was signed only by the TXR. The relevant Operating Circular No. 112 of the Railway lays down that is should be "jointly" signed by the TXR, the Driver and the Guard. Procedures should be implemented rigidly.

(vi) WDM-2 loco No. 17258 hauling 24 Up on 13-1-83 on Bangalore-Arakkonam section of Southern Railway showed that the electrical speedometer (on the Assistant Driver's side) was consistently showing a reading 10-12% higher than what was being displayed by the mechanical speedometer provided on the Driver's side. Such deficiencies idicated inadequate attention during maintenance.

4.9 Electrical

(i) No. 52 Express which arrived at Madras central station on 11-5-82 had two coaches with battery cells in fully discharged condition. At Madras Central, on the same day, the Trivandrum Mail which was on the platform, had a few coaches very dimly lit and fans not working.

(ii) A survey of No. 3 UP Mail, No. 37 Express and No. 142 Express which arrived at Madras on the evening of 11-5-82 and the morning of 12-5-82 indicated an unsatisfactory position regarding condition of batteries resulting in lights and fans not working indicating poor maintenance.

4.10 General

Trail run on the proposed superfast train between Ahmedabad Delhi

The vacuum o nthe engine was 500 mm and in rear SLR 450 mm only. For high speed runs, the vaccum is required to be maintained at a minimum of 510mm on the engine and 495mm in the brake van and the average vacuum level maintained at 505 mm.

Special attention must be paid by the P. Way Engineers to the track condition at stations where the high speed train will run through particularly at junctions/important stations where uptil now all Mail and Express trains had a halt e.g., Kalol, Marwar Jn. etc.

The drivers were generally not happy with the different types of signalling and all drivers, when questioned expressed the need for minimising the mix up and having a uniform type of signalling over long sections. Between Marwar and Ajmer, it was reported that there are several stations where visibility of the Outer and Warner Signal now provided on the same post, is obstructed due to curves, industrial fumes and other physical obstructions and the river is not in a position to sight the first Stop Signal from an adequate distance. This was brought to the notice of the CSTE and he was requested to order a joint signal inspection between Ahmedabad and Jaipur to be carried out by the officers of the Signalling, Mechanical and Safety Branches of Rajkot and Ajmer Divisions at night and communicate the results to the CRS before the application is made for the proposed superfast train.

CHAPTER V

REMARKS ON CERTAIN SELECTED ISSUED BEARING ON SAFETY

5.1 *Inadequate facilities for maintenance of coaching stock at terminal stations*

5.1.1 The inadequacy of facilities for maintenance of coaching stock at terminal stations has been commented upon in the Annual Reports of the Commission for the years 1979-80, 1980-81 and 1981-82. The Railway Board vide their letter No. 79/M(W)/814/11 dated 12-6-1979 had advised the Commission that the Railways had been instructed to review the existing facilities and plan for augmenting then as required.

5.1.2 There does not appear to have been any substantial progress in augmenting the maintenance infrastructure resuling in gradual erosion in the standards of maintenance of rakes which is a matter of concern. The provision of pit lines and other facilities for proper maintenance of a coaching stock is directly linked with the safety of train running. Unless the requisite facilities for maintenance are provided speedily, it could have serious consequences. The occurrence of hot axles, seizure of roller bearing, incidence of leaky/empty dashpots etc., are all indicatives of inadequate maintenance which cannot be ignored.

5.1.3 It has also been suggested that till such time the gap between the facilities available and as considered essential for the proper maintenance of rolling stock is made up, it was inadvisable to introduce additional train services unless, in specific cases, the existing infrastructure was proven to be sufficient. The inadequacies in the facilities should also be made good expeditiously.

5.2 *Train examination and brake power of goods trains*

5.2.1 As pointed out through the Annual Report of the Commission for the year 1979-80, instances of goods trains running without adequate brake power have been frequently noticed during their inspections by the officers of the Commission. The position does not seem to have improved despite instructions issued from time to time by the Railway Board.

5.2.2 In an accident on the Northern Railway between a goods train and a bus at a level crossing between Patelnagar and Shakurbasti stations on 29-10-1982, it was revealed that the goods train had originated from Sawai Madhopur and had travelled all the way upto Patelnagar without any intensive train examination at the originating station or at any other station. It was also observed that during 1982-83, the numbers of hot axle wagons detached in the up direction alone between Mughalsarai and Kanpur ranged from 150 to 300 per month i.e., an average of 5 to 10 wagons every day. This is indicative of poor train examination which is fraught with serious consequences particularly for trains running on the Rajdhani route carrying heavy traffic at high speeds.

5.2.3 It is essential that train examination at the nominated locations should be invariably carried out and a close watch kept on the quality of the work to ensure safe running of trains. On busy double line sections, any mishap involving even a goods train poses a threat to passenger carrying trains on the adjacent line. The need for this cannot, therefore, be over-emphasised.

5.3 *Tardy progress in track circuiting of run-through lines on high speed routes*

5.3.1 When sanction was accorded in January 1977 for the running of Pink City Express on the Metre Gauge at a maximum speed of 100 kmph, it had been stipulated that the run-through lines at way-side stations on the route traversed by the train should be track-circuited between the block clearance points on priority.

5.3.2 Even after an interval of six years, only 4 stations on the Delhi-Rewari section of Northern Railway had been provided with track-circuiting of the run-through lines and it was advised that proposals for the remaining stations had not been progressed due to paucity of funds. The Railway has further advised that even sanctioned track-circuiting works (except those pertaining to track-circuiting between the fouling marks) had been pended in terms of Railway Board's letter No. 82B-123 dated 26-11-82.

5.3.3 It is a matter of serious concern that the progress achieved in implementing this important recommendation forming part of the sanction for the running of high speed train has been insignificant and even sanctioned track-circuiting works are now not being progressed pending a final decision by the Railway Board. The Railway Board's attention to this has been drawn vide Commission's letter No. RS.25-T(9)/79 dated 30-5-1983. This had also been commented upon through the Annual Report of the Commission for the year 1981-82. In the interest of safety, track-circuiting of run-through lines between the block clearance points on high speed routes (both B.G. and M.G.) should be given the highest priority and completed to an early time frame.

5.4 *Provision of track circuiting of run-through lines between fouling marks at stations on trunk routes and important main lines*

5.4.1 The trady progress in the provision of track circuit of run-through lines at stations on the trunk routes and important main lines was highlighted through the Annual Report of 1981-82 (para 5.6). It is a matter of concern that even 17 years after the issue of instructions in 1966, the work has not yet been completed even on the important Railways carrying fast moving traffic. On the Northern Railway, out of 254 stations to be covered on important main line section, no programme has yet been made to execute the work at 110 stations. Similarly, on the Eastern Railway, out of 121 stations on important main line sections, work at 82 stations has yet to be programmed. On the Central Railway, out of 94 stations on important main line sections, the work has yet to be programmed at 53 stations.

5.4.2 The Commission would like to emphasise the need to implement this important safety measure expeditiously.

5.5 *Track circuiting of run-through lines from Fouling mark to Advanced Starter at stations on trunk routes and main lines*

5.5.1 The Railway Board issued instructions to the Railways vide their letter No. 70/Safety(A&R)/2/11 dated 15-12-1970 to track-circuit the run-through lines upto the block section limit at stations where the incidence of shunting involving main line was heavy. Subsequently, a target of 100 stations per year was indicated under the Railway Board's letters of same number dated 11-9-1971 and 25-12-1971. Following the Commission's Report on the Collision between 103 Up 'Howrah-Amritsar Delux Express' and a goods train at Naini station of Northern Railway in October 1977, the Railway Board issued instructions vide their letter No. 77|W3|W5|3 dated 18-11-1977 and 28-8-1978, that the facility of extension of track circuit from fouling mark to block section limit should be provided at stations on the trunk routes and main lines which satisfy one or more of the following criteria :—

(i) Trains run-through the station without stopping at the maximum permissible speed;

(ii) Frequent shunting involving main lines is carried out at the stations;

(iii) Lay out at the station permits a train to be kept waiting at the Advanced Starter clear of the trailing point in rear, permitting reception on the main lines from the rear; and

(iv) the station is already provided with track circuiting on the run-through line from fouling mark to fouling mark.

5.2 The above instructions were reiterated vide Railway Board's letter No. 77/W3/SG/W|5|3 dated 16-2-1981. It is a matter of concern that the progress achieved in implementing this important safety measure has been totally inadequate. According to the information available with the Commission, on the Northern Railway out of 121 stations on the trunk routes, no programme has yet been made to execute the work at 59 stations, and on the main line sections, out of 254 stations, work at 209 stations has yet to be programmed. On the Eastern Railway, the work is yet to be programmed at 54 stations (out of 92) on the trunk routes and at 101 stations (out of 107) on important main line sections. On the South Eastern Railway, the work is yet to be programmed at 162 stations (out of 232) and on the Western Railway, 170 stations out of 339 have yet to be programmed.

5.5.3 It would, therefore, be observed that the progress achieved in implementing this important safety measure has been totally inadequate. The trunk routes carry heavy traffic at high speeds and at many stations, the Advanced Starter is located at full train length shed of the trailing point. The conditions at such stations are, therefore, freight with an element of risk. The Commission would like to emphasise on the Railway Board the need to implement this important safety measure expeditiously.

SURESH CHANDRA
Chief Commissioner of Rly. Safety
LUCKNOW

ANNEXURE—I.

(Refer para 1.2 of Report)

Commission of Railway Safety—History, Functions and Creation of additional Circles and the Technical Wing

BRIEF HISTORY

1.1(a) To exercise effective control over the construction and operation of the first railways in India, which were entrusted to private companies incorporated in United Kingdom, Consulting Engineers were appointed under the Government of India. Later, when the Government undertook the construction of railways, the Consulting Engineers were designated as Government Inspectors. In 1883, their position was statutorily recognised. Two decades later, the Government Railway Inspectorate so called, was placed under the Railway Board which was established in 1903.

(b) Under the Indian Railway Board Act, 1905 and Notification No. 801 dated 24th March, 1905 of the Department of Commerce and Industry, the Railway Board is vested with powers and functions of the Central Government under various sections of the Indian Railways Act, 1890, in respect of all Railways in India and is authorised to make General Rules for the operation of Railways. The Railway Board is, thus the Safety Controlling Authority for the working and operation of Government and Company-managed railways.

(c) Section 181(3) of the Government of India Act of 1935 provided that "functions for securing the safety both of the members of public and of persons operating the railways including holding of inquiries into the causes of accidents should be entrusted to officers independent of the Federal Railway Authority."

To avoid direct subordination of the Railway Inspectorate to the Railway Board, the Pacific Locomotive Committee, headed by Lt. Col. A.H.L. Mount, then Chief Inspecting Officer of the British Railways, suggested in para 210 of their report of 1939 :

"We understand that, under the Govt. of India Act, 1935 it is contemplated that the Inspectorate will be separated from the control of the Railway Board. This is very desirable in so far as it will eradicate the present anomaly of the Board being the Inspecting as well as the Executive Authority. We were informed that the Board fully appreciate the position, and would welcome the change, although it appears that, in practice, Government Inspectors have generally retained their freedom of judgement........".

The principle of separation of the Railway Inspectorate from the Railway Board was endorsed in 1940 by the Central Legislature who recommended that "Senior Government Inspectors of Railway should be placed under the administrative control of some authority of the Government of India other than the Railway Board". Accordingly, the Railway Inspectorate was placed under the administrative control of the Department of Posts & Air, thereafter under the Ministry of Transport and Communictions. The administrative control over the Railway Inspectorate, which was redesignated as the Commission of Railway Safety on 1st Aug. 1966, is exercised by the Ministry of Tourism & Civil Aviation since May, 1967.

(d) The responsibility for safety in the working and operation of Railway rests solely with the Railway Board and the Zonal Railway Authorities. The main task of the Commission of Railway Safety is to direct, advise and caution the Railway Executive with a view to ensure that all reasonable precautions are taken in regard to soundness of rail construction and safety of train operation. The Railway Board refers to the Commission matters relating to modification or enhancement of standards in respect of operation of trains, track, locomotive, rolling stock and signalling embodied in the General Rules, Rules for opening of New Lines Manuals, IRCA Regulations, Schedules of Dimensions and other publications. Suggestions made by the Commission of Railway Safety are duly considered by the Railway Board before necessary revisions are notified.

FUNCTIONS

1.2 (A) The principal functions of the Commission of Railway Safety are :—

(i) Inspection of new Railway Lines prior to authorisation for passenger traffic.

(ii) Periodical Inspection of Open Lines.

(iii) Approval of new works and renewals affecting passenger carrying lines.

(iv) Investigations into accidents, including inquiries into such accidents to passenger trains as are considered to be of a serious nature.

(v) General advice on matters concerning safety of train operation.

(B) Statutory powers of the officers of the Commission of Railway Safety, and facilities to be afforded by Railways are specified in Sections 4 to 6 of the Indian Railways Act, reproduced below :—

"Section 4 :—

(1) The Central Government may appoint persons by name or by virtue of their office, to be Inspectors of Railways.

(2) The duties of an Inspector of Railways shall be :

(a) to inspect railways with a view to determine whether they are fit to be opened for the public carriage of passengers, and to report thereon to the Central Government as required by this Act;

(b) to make such periodical or other inspections of any railway or of any rolling stock used thereon as the Central Government may direct;

(c) to make inquiry under this Act into the cause of any accident on a Railway;

(d) to perform such other duties as are imposed on him by this Act or any other enactment for the time being in force relating to Railways.

Section 5 :—

An Inspector shall, for the purpose of any of the duties which he is required or authorised to perform under this Act, be deemed to be a public servant within the meaning of the Indian Penal Code (45 of 1860) and, subject to the control of the Central Government, shall for that purpose have the following powers namely :—

(a) to enter upon and inspect any railway or any rolling stock used thereon;

(b) by an order in writing under his hand addressed to the railway administration, to require the attendance before him of any railway servant, and to require answers or returns to such inquiries as he thinks fit to make from such railway servant or from the railway administration;

(c) to require the production of any book or documents belonging to or in the possession or control of any railway administration (except a communication between a railway company and its legal advisers) which it appears to him to be necessary to inspect.

Section 6 :—

A railway administration shall afford to the Inspector all reasonable facilities for performing the duties and exercising the powers imposed and conferred upon him by this Act."

(C) The duties under sections 4(2)(a) & 4(2)(b) of the Indian Railways Act have been detailed in succeeding Sections 17 to 20 and 22 to 24. These are :—

(i) to sanction the opening of new railway lines after inspection on behalf of the Central Government.

(ii) to inspect a railway or a part of it and submit a detailed inspection report to the Central Government;

(iii) to sanction the execution of all works, including new works, affecting the safety of running lines;

(iv) to report to the Central Government any condition which may endanger the safety of travelling public and make recommendations;

(v) to inspect a closed railway prior to its re-opening.

(D) Functional duties, including field inspectoins, of an Inspector of Railway, since designated as Commissioner of Railway Safety, are amplified among other technical publications, in the :

(i) General Rules for all open lines of railways in India administered by the Government;

(ii) Rules for opening of a Railway or Section of a Railway for the public carriage of passengers;

(iii) Indian Railway Code of practice for Engineering works;

(iv) Indian Railways Way & Works and Signal Engineering Manuals;

(v) Schedules of Dimensions;

(vi) Indian Railways Conference Association Regulations;

(vii) Statutory Investigation into Railway Accidents 1973.

The Commissioner of Railway Safety is thus responsible for the day to day sanctions he accords to works affecting the safety of the running road, for dispensations agreed to under "approved special instructions" after due examination of each application, and for detailed Reports of Inspections of Open Line Sections, of New Lines, Conversions, Sections doubled, tripled or quadrupled, of Electric Traction and so on.

(E) After its separation from the Railway Board in May, 1941 a post of Chief Government Inspector of Railways, later designated as Chief Commissioner of Railway Safety was created to enable the Ministry, under which the Railway Inspectorate was placed to exercise "effective technical control".

The Chief Commissioner of Railway Safety directs the technical activities of the Organisation and is responsible for advising the Controlling Ministry in matters relating to recruitment of officers, postings and promotions, budget and expenditure etc. The Chief Commissioner deals principally with :—

(i) Matters appertinent to Field Inspections and statutory inquiries into accidents;

(ii) Inspection Reports of Commissioners of Railway Safety;

(iii) Reports of statutory inquiries held into Accidents by the Commissioners. After careful study he forwards his considered opinion to the Controlling Ministry and the Railway Board with such recommendations as he feels are necessary;

(iv) Railway Board's suggestions pertaining to corrections or amendments to General Rules, Rules for Opening of a Railway, Schedules of Dimensions, the Way & Works and Signal Engineering Manuals, Procedures for inquiries into accidents, Codes of Practice for Engineering Works and other publications;

(v) Preparation of Annual Report on the working of the Commission of Railway Safety.

Field duties of the Chief Commissioner of Railway Safety consist of inspections of sections of Railways, visits to the Railway Headquarters and Divisional Offices, Railway installations and Circle Offices. If considered necessary, he holds inquiries into accidents of an important nature.

Creation of Additional Circles and the Technical Wing

1.3 (a) Prior to February, 1960, the organisation consisted of 4 Circles—Northern, Eastern, Southern and Western. On account of development works under the Five Year Plans, the work load increased very considerably, specially in the Eastern Circle which included the Eastern, South Eastern, a portion of North Eastern and North East Frontier Railways aggregating to 14,465 route kilometres as on 31-3-60. An additional Circle known as 'Construction Circle' was, therefore, created on 1-3-60 based at Calcutta, to deal with major projects, the electrification on the Eastern and South-Eastern Railways and the new Dandakarnya-Bolangir-Kiriburu Railway construction.

(b) On account of considerable increase in work load, the Circles were re-organised from 11th April, 1968. With this reorganisation of the jurisdictions, the construction Circle was renamed as South Eastern Circle and Eastern as North Eastern Circle both headquarters at Calcutta.

Pursuant to the recommendations of the Railway Accidents Inquiry Committee, 1968, two more Circles of Inspection called the Central Circle and North Eastern Circle, located at Bombay and Gorakhpur respectively, were created in 1972. The Central Circle started functioning w.e.f. 2nd February, 1973, and the North Eastern Circle from 21st April, 1973. The erstwhile North Eastern Circle headquartered at Calcutta was renamed as Eastern Circle.

(c) Pursuant to the recommendations of the Railway Accidents Committee, 1962, a "Technical Wing" was set up—

"........to help the Commissioner and the Additional Commissioners (since redesignated as Chief Commissioner and Commissioners of Railway Safety, respectively) of Railway Safety to carry out............ inspections and 'Audit checks' on the quality and standard of maintenance of locomotives, rolling stock, state of equipment, safety aspects of actual practices followed by railways and observance of rules and regulations affecting the safe operation of railways."

Four posts of Deputy Commissioner of Railway Safety drawn each from Signal & Telecommunication, Electrical Traction Mechanical Engineering and Operating Departments of the Railways were accordingly created.

ANNEXURE II

(Refer para 3.2.3 of Report)

Statutory Inquires—Rules, Procedure and Scope

Rules :

1.1 (a) Rules for guidance of the Officers of the Commission of Railway Safety for holding inquiries into Railway accidents are contained in the "Statutory Investigation into Railway Accident's Rules, 1973" notified by the Ministry of Tourism & Civil Aviation and corrected vide correction slip No. GSR 20.

According to the requirements of the "Railway (Notices of and Inquiries into Accidents) Rules, 1973" notified by the Ministry of Railways (Railway Board), all accidents as described in Section 83 of the Indian Railways Act are reported. As per explanation below clause 3 of the Rules these accidents include :—

"...........Accidents of a description usually attended with loss of human life are meant to include all accidents to passenger trains like collisions, derailments, train-wrecking or attempted train wrecking, cases of running over obstructions placed on the line, of passengers falling out of trains, or of fires in trains, in which no loss of life or grievous hurt as defined in the Indian Penal Code, (hereinafter referred to as the grievous hurt) or serious damage to Railway Property of the value exceeding Rs. 1,00,000 has actually occurred but which by nature of the accident might reasonably have been expected to occur; and also cases of land slides, or of breaches by rain or flood, which cause the interruption of any important through line of communication for at least 24 hours".

(b) The relevant portions of para 2 of Statutory Investigation into Railway Accidents Rules, 1973, are reproduced below :

"2(2).........Every accident to a train carrying passengers which is attended with loss of human life, or with grievous hurt as defined in the Indian Penal Code to a passenger or passengers in the train or with serious damage to railway property of the value exceeding one lakh rupees and any other accident which in the opinion of the Chief Commissioner of Railway Safety or the Commissioner of Railway Safety requires the holding of an inquiry shall be deemed to be an Accident of such a serious nature as to require the holding of an Inquiry.

2(3) Where the Chief Commissioner of Railway Safety considers the holding of an Inquiry into an accident necessary, he may either hold the inquiry himself or direct the Commissioner of Railway Safety to do so.

Explanation : The Inquiry under this rule shall be obligatory only in those cases where the passengers killed or grievously hurt were travelling in the train. If a person ravelling on the foot-board or roof of a passenger train is illed or grievously hurt or if a person is run over at a level crossing or elsewhere on the railway track, an inquiry nder this rule shall not be obligatory. Similarly, if in a collision between a road vehicle and a passenger train at level crossing, no passenger in the train is killed or grievously hurt, it shall not be obligatory to hold an inquiry. For the purpose of this rule, workmen's trains or ballast trains carrying workmen shall also be treated as passenger trains and in the event of a workman getting killed or grievously hurt as a result of an accident to the train, an inquiry under this rule shall be obligatory.

2 (5) (a) If, for any reason, the Commissioner of Railway Safety is unable to hold an inquiry at an early date after the occurrence of such an accident, he shall inform the Head of the Railway Administration concerned and the Railway Board accordingly and he shall also inform the Chief Commissioner of Railway Safety of the reason why an inquiry has been held by himself.

2 (5) (b) On the receipt of the proceedings of the joint inquiry (inquiry made by a Committee of Railway Officers) from the Head of the Railway Administration in accordance with rule 15 of Railway (Notices of an Inquiries into Accidents) Rules, 1973, the Commissioner of Railway Safety shall scrutinise the same and in case he agrees with the findings of the joint inquiry, shall forward a copy of the report to the Chief Commissioner of Railway Safety alongwith his views on the findings and recommendations made. If, on the other hand, the Commissioner of Railway Safety, after examination of the joint inquiry proceedings, considers that an inquiry should be held by himself, he shall, as soon as possible, notify the Chief Commissioner of Railway Safety the Railway Board and the Head of the Administration concerned, of his intention to hold an inquiry and he shall at the same time fix and communicate the date, time and place for the inquiry."

2. Scope

2.1 The Commissioner holds inquiries into accidents with a view to ascertaining the causes and fix the responsibility thereof on the individuals concerned. Investigations are also carried out into the question as to whether prompt and adequate steps were taken by the railway adminstration for relief measures, e. g. first aid, medical treatment, refreshments, evacuation of injured passengers and facilities given to passengers such as arrangements for transhipment, completion of their journey to destination, running of duplicate trains, etc. As a result of his inquiry, the Commissioner also makes certain recommendations which are designed to prevent a recurrence of similar accidents, e.g. new rules or equipment for ensuring safety, improved standards of signalling, construction, operation and maintenance of track, bridges etc. He also comments on matters observed by him during the course of his inquiry which may not have any direct bearing on the cause of the accident under investigation but generally affect the safe working of the railway and may cause accidents.

3. Procedure :

3. 1(a) Under the Statutory Investigation into Railway Accidents Rules, 1973 the Commissioner of Railway Safety on receiving intimation of the occurrence of a serious accident proceeds to the site by the quickest possible means and records all particulars after careful inspection before according sanction to the Railway for clearance of wreckage and restoration of the lines. He then carries out tests as required and records evidence. The emphasis has necessarily to be on the material and circumstantial evidence at site, which in almost all cases leads to the determination of the cause or causes.

(b) Officers of the local magistracy and police are advised of the inquiry and may attend the same. The press and the public are not admitted to the Commissioner's inquiry The public, is however invited through the press and the radio to give evidence at his inquiry in the capacity of witnesses.

APPENDIX-A-1

List of New Railway Lines, Doublings, Diversions, Electrifications etc. Inspected and Authorised during 1982-83

Sl. No.	Nature of Work	Name of Railway	Kms.
1	2	3	4
	A. NEW LINES		
	(All Broad Gauge)		
1.	APTA-PEN	Central	20·45
2.	DIVA-VASAI ROAD	Do.	41·96
3.	JEONATHPUR-VYASNAGAR	Northern	2·368
4.	BAIYYAPPANAHALLI-YELAHANKA	Southern	16·00
5.	DHARMAVARAM-KALLURU-GOOTY	South Central	91·00
			171·778
	B. DIVERSIONS*		
1.	KANAUTA-KATIPURA (MG)	Western	2·06
2.	NIMODA-NARAINPUR TATWARA (BG)	Do.	7·38
3.	NEW GERATPUR-VATVA (BG)	Do.	6·14
			15.58
	C. DOUBLINGS		
	(All on Broad Gauge)		
1.	NAGDA-BERAWANYAA	Western	1·943
2.	SUWASRA-SHAMGARH	Do.	13·70
3.	TGR 2-IGATPURI	Central	4·963
4.	TGR 2-KASARA	Do.	9·186
5.	BHARATWADA-GODHANI	Do.	6·34
6.	MAIHAR-UCHERA	Do.	14·17
7.	PATEL-NAGAR-RAMPURA CABIN	Northern	1·755
8.	DELHI KISHANGANJ-NEW DELHI	Do.	1·806
9.	T-BLOCK-AMBALA CANTT.	Do.	3·19
10.	PANIPAT-BHAINI KHURD	Do.	16·728
11.	DUM DUM-CANTT-BIRATI	Eastern	3·41
12.	MULLURCARAI-SHORAPNUR	Southern	7·00
			84·191
	D. CONVERSION FROM METRE TO BROAD GAUGE		
1.	YELAHANAKA-DHARMAVARAM	Southern	162·00
			162·00
	E. ELECTRIFICATION		
	(Broad Gauge)		
1.	DELHI RING RAILWAY	Northern	61·18
2.	PATEL NAGAR-RAMPURA CABIN	Do.	10·92
3.	TIRUVALLUR-KADAMBATTUR	Southern	27·00
4.	VEYSARPADI-VILLIVAKKAM	Do.	6·00
			105·10
	F. RESTORATIONS		
1.	KALLAR-COONOOR (MG)	Southern	20·00
			20·00

APPENDIX A-2

New Types of Locomotives and other Rolling Stock Recommended to the Railway Board for Sanction

Central Railway

1. ZDM/4A class diesel hydraulic locomotives on Latur-Kurduwadi-Miraj N. G. Section.
2. Goods train with air brakes, trailing load of 4500 tonnes, hauled by double headed WDM/2 diesel electric locomotives modified for air brake operation, on Bhopal Bina Katni-NKJ double line D. G. Section.

Eastern Railway

3. WAP-1 class A.C. locomotive on specified sections.
4. Rajdhani Express comprised of 18 coaches air-braked stock hauled by two WDM/2 standard locomotives on the specified route.

South Eastern Railway

5. 6 Axle B.G. Stub end wagon in empty conditions on entire B.G. system of S. E. Railway.
6. 20 tonnes Diesel Crane on entire B.G. system of S.E. Railway.
7. B.G. Bogie Hopper wagon type BOBY on entire B.G. system of S. E. Railway.
8. ZDM 2R Class Diesel Locomotive on N.G. Section of Nagpur Division.

Northern Railway

9. WDS-4B locomotive on New Delhi-Delhi-Kishanganj Section.
10. WAP-1 class electric locomotive at a maximum speed of 130 Kmph. on Mughalsarai-Ghaziabad section.
11. 20T B.G. Diesel Prototype crane manufactured by Jamalpur Workshop on various sections at specified speeds.
12. 180T B.G. Special Wagon type 'BWZ' on New Delhi-Ambala Cantt. section.
13. Electric Traction for running EMU services on various sections of the Delhi Ring Railway at specified speeds.
14. 12 Axle, 132T B.G. wagon for M|s. BHEL Hardwar to Nizamuddin.
15. 12 Axle Special wagon for the movement of 200 MW Turbo Generator Starter of M/s. BHEL, Hardwar.

Southern Railway

16. WDM-6 class BO-BO type diesel electric locomotives on the various B.G. sections at a maximum permissible speed of 60 Kmph.
17. Bogie wagon type 'BOX N' on various B.G. sections in empty and loaded condition at the maximum permissible speed indicated in the concerned safety certificate.

South Central Railway

18. 20 tonnes B.G. Diesel Prototype Crane manufactured by Jamalpur Workshop on various B.G. section at a maximum permissible as shown against each section in the Joint Safety Certificate.
19. B.G. Goods brakevan type 'BVZT' on the various sections mentioned in the Joint Safety Certificate upto a maximum speed of 100 Kmph.
20. 10 tonne B.G. Diesel Crane (30' long jib) having 3 axle rigid frame with a maximum axle load of 18 tonne on various B.G. sections at a maximum permissible speed indicated against each section in the Joint Safety Certificate.
21. WDM-6 class Diesel electric locomotives (BO-BO type) on various B.G. sections at the maximum permissible speed as recommended by CRS.
22. 10 tonne B.G. Diesel Crane (35 ft. long jib) having 3 axle rigid frame with maximum permissible speed as indicated against each section in the Joint Safety Certificate.
23. Operation of above crane upto 5 Kmph. when travelling on its own power without load or with load varying upto 9 tonnes at 5.0 m. radius.

North Eastern Railway

24. 130 Tonnes B.G. Well (BWS) Wagons on the Barauni-Samastipur-Muzaffarpur section at maximum speeds of 75 Kmph. in empty condition and 30 Kmph. in loaded condition.

NEW TYPES OF LOCOMOTIVES AND ROLLING STOCK SANCTIONED BY COMMISSIONERS OF RAILWAY SAFETY

Central Railway

1. WCG-2 class D.C. locomotives on Karjat-Lonavla B.G. section in the ascending direction by one leading WCG-2 locomotive and four assisting WCG-2 locos as bankers out of which one will be a dead loco at a maximum speed of 20 Kmph.
2. Mail and Express trains comprising 21 ICF all-coil coaches fitted with strengthened draw gear and hauled by double headed WDM/2 diesel electric locomotives in multiple operation on the Tuglakabad-Balharshah B.G. section at a maximum speed of 100 Kmph.
3. WDM|2, WDS|2, WDS|4 and 4B locomotives for operating goods trains on the RCF siding at a maximum speed of 30 Kmph. on Pen-Thull Vaishet Section.
4. Bogie Hopper wagons ex : Mathura to Nagpur via Jhansi-Bina-Itarsi-Amla Jn. and Bina-Katni B.G. sections at a maximum permissible sanctioned speed for goods train.
5. Locomotives and Rolling Stock on newly constructed siding for Diamond Cement Factory from Damoh Railway station situated on Bina-Katni section.
6. B.G. Bogie Hopper Wagons ex : Mathura to Katni via Gwalior-Jhansi and Bina section at a maximum permissible speed of 40 Kmph.
7. ZDM/4A class locomotive upto a maximum speed of 50 Kmph. between Km. 544|3 to Km. 562|5 on Miraj-Pandharpur N.G. section.
8. WDS/6 class locomotive as a light engine or attached to goods train from Jhansi to Tuglakabad B.G. section.

9. WDM/2 class locomotive at a maximum speed of 40 Kmph. on Chalisgaon-Dhule B.G. section.

10. WAM/4, WAM/4A and WAG/2 class locomotives on the siding between Nasik Road station to Eklehra (Nasik) Power House at a maximum speed of 15 Kmph.

11. WDM|2 or WAM|4 locomotives fitted with modified wheel profile, upto a maximum speed of 100 Kmph. on Naini-Itarsi-Bhusaval and Bhusaval-Igatpuri B.G. sections—for service trials.

12. WCM, WCG and WCAM/1 class electric locomotives on newly constructed Vasai Road-Diva Rail link of Bombay Division.

13. Sanction for Track Research & Track Monitoring Oscillograph car run and track vehicle interaction studies on (i) Kanpur-Jhansi (ii) Jhansi-Itarsi-Nagpur-Wardha-Balharshah B.G. sections.

14. 15 Dn/16 Up G.T. Express hauled by coupled WDM/2 Diesel electric locomotives followed by 21 nos. of ICF all coil coaches at a maximum speed of not exceeding 110 Kmph. and a Booked Speed of not exceeding 100 Kmph. on Balharshah-Tuglakabad section.

15. WDS/6 class locomotive with a maximum axle load of 21.5 t plus 2%, on various sections.

Eastern Railway

16. BCX-Mark II type bogie wagons as Parcel Van attached to Passenger/Parcel trains on specified sections.

17. N.G. Diesel Rail Car over Shantipur-Nibadwip Ghat (N.G.) section.

18. WAM-4 class AC/MT locomotive over Naihati-Ranaghat section.

19. WAM/4, WAG|1, WAG|2, WAG|3 and WAG/4 classes of locomotives over Dum Dum Jn.-Bangaon Jn. section.

20. WG, WDM/1 and WDM/2 classes of locomotives over Ikra-Gaurandi section.

21. WAM|2, WAM|3, WDM|4, WAG|1, WAG|2, WAG|3 and WAG|4 classes of locomotives over Kalinarayanpur-Shantipur single line section.

22. WAM/4A class of locomotives in emergency only over specified sections.

23. WDM/2 class Diesel electric locomotive over Patna-Gaya section.

24. WAM/4 AC/MT locomotive over specified sections.

25. WAM/4, WAM/4A, WAG/1 and WAG/4 classes of locomotives over specified sections.

26. 20 Tonnes B.G. Diesel Proto-type Crane in regular break-down services over specified sections.

27. 182 Tonnes B.G. Special Wagon type "BWZ" over specified sections.

28. WAM/4A class AC/MT locomotives over specified sections.

South Eastern Railway

29. 3 Nos. 150t. B.G. Special Wagon on their own wheels in empty condition ex: Ranchi-Nagpur via Hatia-Bondamunda-Bilaspur-Raipur.

30. Single WAM/4, WAM/4B Class AC/MT electric locomotive on Jagdalpur-Araku B.G. electrified section.

31. Single Double Headed WAM/4A electrified locomotive with Hitachi traction Motors type H.S. 1050 on B. G. electrified section except Waltair-Kirandul line.

32. Train loads composed of 50 BOY Wagons hauled by 3 electric locomotives fitted with DUAL/IRAVD-2 brake system on Araku-Waltair section—for Braking trials.

33. Two CLW-Built WDS-4B shunting locomotive from Tikiapara to Haldia CPT yard.

Northern Railway

34. WAM/1 electric locomotive with goods/passenger trains on New Delhi-Hazrat Nizamuddin-Patel Nagar-Kishanganj-New Delhi sections of Ring Railway at specified speeds ranging from 35 to 100 Kmph.

35. WAG-4 electric locomotive with goods/passenger trains on New Delhi-Hazrat Nizamuddin-Patel Nagar-Kishanganj, New Delhi of Ring Railway at specified speeds ranging from 35 to 100 Kmph.

36. WAM-4 electric locomotive with goods/passenger trains on the above sections of the Delhi Ring Railway at speeds ranging from 35 to 100 Kmph.

37. WAP-1 electric locomotive with goods/passenger trains on the above sections of the Delhi Ring Railway at speeds ranging from 35 to 100 Kmph.

38. WDM-4 diesel locomotive on Balamau-Sitapur City section at specified speeds.

39. WDM-2 diesel locomotive on Balamau-Sitapur City section at specified speeds.

40. WAM-1 locomotives on specified sections at specified speeds.

41. WAM-4 locomotives on specified section at specified speeds.

42. WAP-1 locomotives on specified sections at specified speeds.

43. WAG-4 locomotives on specified sections at speeds ranging from 35 to 80 Kmph.

44. WAG-4 locomotives on Okhla-Lajpatnagar section at the speed of 32 Kmph.

45. WAP-1 locomotives on Okhla-Lajpatnagar section at the speed of 32 Kmph.

46. WDM-4 class of locomotives on Raja-Ka-sahaspur-Sambhal-Hatim Sarai section at the speed of 30 Kmph.

47. WAM-4B locomotive No. 21324 fitted with secondary suspension springs on specified sections at specified speeds—for Oscillation trials.

48. WAM-4B electric locomotive (No. 21324) fitted with secondary-suspension springs on Mughalsarai-Kanpur-Tundla-Ghaziabad-New Delhi sections at the speed of 80 Kmph.

49. WDM-2 locomotives at 110 Kmph. with vacuum brakes on Kanpur-Mughalsarai section—for route proving runs.

50. Rajdhani Express between New Delhi and Mughalsarai with double headed WDM-2 locomotive at 110 Kmph.

51. BOKN prototype bogies wagon upto a maximum speed of 110 Kmph. with WDM-2/WAM-2/WAM-4 locomotives —for oscillation trials.

52. 180T. B.G. Special wagon type 'BWZ' on specified sections at speeds ranging from 10 to 40 Kmph.

53. B.G. bogie milk van of 40,000 litres capacity type VVN of Indian Dairy Corporation on specified sections at speeds ranging from 35 to 100 Kmph.

54. 2BCX Wagons Mark-II on specified sections at speeds ranging from 40 to 100 Kmph.

55. 130 Ton Well wagon type 'BWS' on Akbarpur-Tanda sections at 20 Kmph. in loaded condition and at 35 Kmph. in empty condition.

56. 180T BWZ wagon on specified sections at 15 Kmph.

57. BOXN prototype bogie wagon on specified sections—for oscillation trials.

58. 130 Ton Well wagon type 'BWS' on specified sections at specified speeds.

59. Electric Traction for running of EMU services on specified sections of the Delhi Ring Railway at 80 Kmph.

60. EMU coaches on Delhi-Ghaziabad section at 100 Kmph.

61. Prototype coaching bogies of Allahabad Division at 160 Kmph. for Oscillation.

62. 12 Axle Special wagon for the movement of 200 MW Turbo Generator Starter of M/s. BHEL, Hardwar.

63. 12 Axle Special wagon for movement of 200 MW Turbo generator starter of M/s. BHEL, Hardwar on specified sections at 20 Kmph. when loaded and 40 Kmph. in empty condition.

64. 180T B.G. Special Wagon type 'BWZ' on specified sections at speeds ranging from 10 to 40 Kmph.

65. Electric Traction for running of EMU services on specified sections of Delhi Ring-Railway at 50 Kmph.

APPENDIX B-I

List of accidents inquired into by the officers of the Commission of Railway Safety during 1982-83

Sl. No.	Brief Particulars	Casualties		Cost of damage to Rly. assets (in Rs.)	Cause
		Killed	Injured		
1	2	3	4	5	6
1.	Collision between 1 Dn Gauhati—Bareilly Express and a tractor at Level Crossing at Kurraiya station on the Mailani—Pilibhit section of North Eastern Railway on 1-4-1982.	2	1	250	Level crossing gate not properly secured against road traffic.
2.	Rear-end Collision of 102 Down Kathgodam-Kasganj Passenger with runaway coaches between Kathgodam and Haldwani stations on the Izzatnagar Division of N. E. Railway on 20-4-1982.	2	7	3,35,000	Coaches left on a running line without being properly secured, escaping into the Block Section behind the departing train, before points could be set back for the slip siding.
3.	Collision of Down Empty Box Special Goods Train with loaded Motor Truck No. MPD-5749 at 'A' Class manned Level Crossing No. 116 at Km. 231/4-5 on twin single line No. 1 between Bairagarh and Nishatpura 'D' Block Cabin on the Ujjain-Bhopal B. G. Section of Western Railway on 25-4-1982.	3	2	19,250	Down Empty BOX Special entering the Level Crossing when its gate was open to road traffic.
4.	Head-on Collision between 13 Up Bangiya-Tezpore Express and 14 Down Tezpore-Bangiya Express between Dakargaon and Tezpore stations on the Rangapara North Jn. Tezpore section of N. F. Railway on 8-5-1982.	3	9	80,000	Both 13 Up and 14 Down were despatched into the same Block Section without correct "Authority to Proceed".
5.	Collision between MBE Down Goods and No. EG-18 Up Suburban Local trains at Gummidipundi station on Madras—Gudur B. G. Electrified section of Southern Railway on 3-6-1982.	9	26	3,72,000	The Goods train having been driven past the Down Home Signal at 'ON'.
6.	Derailment of No. 3 Down Assam Mail between Narayanpur and Thana Binpur Jn. stations on the Barauni Katihar M. G. section of N. E. Railway on 20-6-1982.	11	47	84,265	Speed in excess of that prescribed for the track.
7.	Collision between No. 978 Down Goods train and 4 SL Passenger train at Bandhua Kalan station on Lucknow-Sultanpur section of Northern Railway on 26-6-1982.	2	25	2,31,100	Disregard of signals by the driving crew of 978 Down Goods train.
8.	Collision of Light Engine No. 17998 WDM-2 with No. 2 CCM Passenger train at Agori Khas station on Chunar-Chopan section of Northern Railway on 29-6-1982.	4	14	3,65,000	Defective brakes of the light engine.
9.	Collision of No. 54 Down Himachal Express with D-51 Up Goods train at Rupnagar station on Delhi Division of Northern Railway on 6-8-1982.	—	2	1,62,515	No. 54 Down being driven past reception Signals in on position and shunting of goods train not having been suspended before granting line clear for 54 Down Express train.

1	2	3	4	5	6
10.	Collision between 9 AK Passener train with Bus No. PBA-7883 at manned Level Crossing No. 30-B between Jandoke and Tarantaran stations on Khemkaran-Amritsar section of Northern Railway on 11-9-1982.	34	21	1,975	Level crossing gates not having been closed in the face of an approaching train.
11.	Derailment of No. 11 Up Barak Valley Express between Katakhal Jn. and Silchapra stations on Badarpur Jn.-Silchar M. G. section of North-east Frantier Railway on 4-9-1982.	—	14	69,500	Spread of gauge.
12.	Outbreak of Fire in YFYS Coach No. 72438 of T-171 Down Bombay VT-Thane Local train at Kanjur Marg station of Central Railway on 2-10-1982.	—	—	3,94,000	Sabotage—a deliberate and intentional act of arson by a person or persons unknown.
13.	Collision between a Goods train and Bus No. DLP-162 at interlocked Level Crossing No. 4 'B' between Patel Nagar and Daya Basti stations on Northern Railway on 29-10-1982.	3	5	1,200	The train having been driven through the open level crossings.
14.	Accident to No. 6 Down Amritsar-Howrah Mail on Down line of Dankuni station on Barddhaman-Howrah Chord line Electrified section, Howrah Division, Eastern Railway on 2-11-1982.	—	4	89,000	Passing Home Signal at danger.
15.	Collision of No. 5 Up Howrah-Rourkela Express with the parted rear portion of Up Electric Bondamunda Special Goods train between Mancharpur and Jaraikela stations on the Rourkela-Chakradharpur Double line Electrified B. G. section of South Eastern Railway on 2-12-1982.	9	44	63,00,000	No. 5 Up Express train having been admitted into the block section between Mancharpur & Jaraikela stations on valid authority while the section was still blocked by the parted portion of the preceding Goods train E/BNDM Special.
16.	Head-on Collision between No. 6 Down Kamrup Express and No. 7 Up Tinsukia Mail at Diphu station on Mariani Jn.-Lumding Jn. M. G. section of N. F. Railway on 9-12-1982.	1	5	30,000	Disregard of the Down Home Signal by the Driver of 6 Down Kamrup Express.
17.	Collision between No. 10 Down Howrah-Jagannath Express and No. 219 Up Puri-Waltair Passenger at the South end of Khurda Road station Yard on Kharagpur-Waltair B. G. section of South Eastern Railway on 15-12-1982.	—	9	2,04,000	Due to 219 Up Passenger being started from Khurda Road Station despite the departure signals lowered earlier having been put back to danger a few minutes before the actual departure of 219 UP with the resultant collision with 10 Down Express which was admitted on valid authority into Khurda Road Station
18.	Fire accident to 1 GGC Passenger train between Mahua-riya and Dudhinagar stations of Eastern Railway on 27-12-1982.	1	4	3,000	Electrical fault in the SLR Coach No. 5157.
19.	Head-on Collision between No. 251 Up Passenger and Down Emergency Special between Hatiali and Dikom stations on Tinsukia-Dibrugarh Town M. G. section, NF Railway on 28-1-1983.	3	7	1,10,250	The Passenger train being allowed into the Block Section in violation of prescribed procedure and being driven at a speed significantly in excess of that prescribed.
20.	Collision of H. 292 Down Haripal Local with B. 114 Down Bandel Local between Liluah and Howrah stations in the Howrah Division of Eastern Railway on 16-3-1983.	17	9	1,35,000	The Motorman of H. 292 down not having exercised great caution after passing Automatic signal No. 2A/2 in the 'On' position and falling the adhere to the speed limits laid down.
21.	Derailment of No. 25 Up Trivandrum Central Bangalore City Express at Karunagapalli Station Yard on Trivandrum Division of Southern Railway on 21-3-1983.	1	16	19,42,000	(i) Poor condition of track ; (ii) Mal-adjustment in locomotive.
		105	353	1,09,29,305	

1982-83

List of accidents entrusted to Railway Administrations for inquiring under Rule 2(5)(e) of the Statutory Rules.

Sl. No.	Brief Description of the accident	Casualties		Damage to Rly. assets in Rs.	Cause
		Killed	Injured		
1	2	3	4	5	6
1.	Derailment of No. 8 Down Tinsukia Mail between Amguri and Selenghat stations, N. F. Railway on 21-6-82.	2	2 (1 grievous)	95,000	Sabotage-by removing all the fish-bolts and fish-plates at joint by person (s) unknown.
2.	Fire to Inspection Carriage No. RA-62 on No. 13 Up "Upper India Express" at Kanwar station, Northern Railway on 7-7-82.	—	—	6,82,000	Electric short circuit or inadvertently throwing of burning cigarette/bidi.
3.	Accident to a passenger in No. 141 Up Coromondal Express between Ulavappadu and Tettu stations S.C. Railway on 9-7-82.	1	—	—	The vestibule doors not being dummied to prevent the passengers from using them inadvertently.
4.	Fire in No. 34 Down Passenger between Kamrup and Borhat stations, N. F. Railway on 12-9-82.	1	6 (1 grievous)	250	Extraneous burning materials like lighted matchstick or burning cigarette coming in contact with highly inflammable synthetic straps and tarbased card-board packages.
5.	Fire in Coach No. 1052 FCS of No. 36 Up Bilaspur-Bhopal Passenger at Burhar Stn. S. E. Railway on 17-2-83.	—	—	2,00,000	Some burning material like cigarette butt left on the cushion of 1st Class berth by unauthorised traveller.
6.	Derailment of No. 5 Up Kamrup Express between Kampur and Jamunamukh stations, N. F. Railway on 30-3-83.	1	6 (1 grievous)	21,500	Removal of one pair of fish-plates and placement of a big boulder on the track.
		—	14	9,98,750	

APPENDIX—'C'

Statistics of accidents inquired into by the Commission in the 10 year period 1972-73 to 1982-83.

Year	No. of Inquiries	Casualties		Damage to Railway Assets.
		Killed	Injured	
1972-73	14	36	229	12,90,420
1973-74	21	106	360	41,41,633
1974-75	25	142	201	24,32,028
1975-76	30	54	271	29,02,495
1976-77	30	106	445	77,31,196
1977-78	27	129	319	1,27,86,949
1978-79	28	101	431	1,40,37,594
1979-80	29	174	477	1,09,69,249
1980-81	34	172	615	2,95,91,973
1981-82	38	582	833	4,65,49,787
	276	1602	4181	13,24,33,324
Average for 10 years period 1972-73 to 1981-82	27	160	418	1,32,43,332
1982-83	21	105	353	1,09,29,305

APPENDIX—'D'

Serious Accidents inquired into by the Commission under main categories

Sl. No.	Nature of Accidents	1972-73 to 1981-82	1982—83	*
1.	Collisions in station yards	61	3	(6)
2.	Collisions in mid section	25	7	(7)
3.	Collisions in Automatic Signalling Sections (including sections under APB)	22	1	(1)
4.	Derailments	89	4	(14)
5.	Collisions at Level Crossings	38	4	(4)
6.	Fires in trains	18	2	(2)
7.	Miscellaneous	23	—	(4)
		276	21	(38)

*Figures in brackets pertain to 1981-82.

APPENDIX 'E'

Break-up by principal causes of Accidents inquired into by the Commission of Railway Safety

Cause	1972-73 to 1981-82		1982-83	
	No. of cases	% of total	No. of cases	% of Total
1	2	3	4	5
COLLISIONS				
Trains driven past fixed signals at danger	36	13·1	5	23·8
Reception of train on occupied line at a station	12	4·4	—	—
Irregular shunting by Driving Crew/Station Staff	9	3·3	—	—
Train driven without due care in Automatic Signalling Sections (including APB)	22	8·0	1	4·8
Train driven without requisite care under conditions of total interruption of communication	—	—	1	4·8
Improper securing of Rolling Stock	4	1·5	1	4·8
Other failures of Station Staff/Driving Crew	23	8·4	2	9·5
Failure of other Railway Staff	1	0·4	—	—
Miscellaneous	1	0·4	1	4·8
DERAILMENTS				
Sabotage of track i. e. malicious interference by miscreants	17	6·2	—	—
Trains driven significantly in excess of authorised speed	11	4·0	1	4·8
Defective setting of points	6	2·1	—	—
Track defects of failures	16	5·8	2	9·5
Rolling stock defects or failures	18	6·6	—	—
Combination of Rolling Stock and Track defects	9	3·3	—	—
Mismanipulation of trains by Driving Crew & other failures	6	2·1	—	—
Running over obstructions	—	—	—	—
Causes note stablished	6	2·1	—	—
COLLISIONS AT LEVEL CROSSINGS				
Failure of Gatemen or other railway staff at manned level crossings	21	7·6	4	19·0
Negligence of road users and others	17	6·2	—	—
FIRES IN TRAINS				
Electrical Defects	6	2·1	1	4·8
Live spark from loco	1	0·4	—	—
Negligence/omissions of passengers such as throwing lighted match-stick, cigarettes, etc. carriage of explosive/combustible materials in contravention of Regulations, sabotage etc.	9	3·3	1	4·7
Cause not established	1	0·4	—	—
SUDDEN CONVULSIONS OF NATURE				
(Such as Cyclone or Flood)	2	0·7	—	—
ACTS OF PASSENGERS IN DEFIANCE OF REGULATIONS—				
Leaning out of Carriages, Crossing of Railway lines, or travelling on roofs and footboards.	—	—	—	—
MISCELLANEOUS HUMAN FAILURES	13	4·7	—	—
OTHERS	8	2·9	1	4·7
	275	100·0	21	100·0

APPENDIX 'F'

Accidents under Section 83 Railway-wise for the four year period 1979-80 to 1982-83

Railways	Year	Collisions	Derailments	Level Crossing	Fire	Misc.	Total
Central	79—80	11	20	7	5	22	65
	80—81	8	31	5	9	18	71
	81—82	11	34	5	8	8	66
	82—83	3	29	6	3	13	54
Eastern	79—80	5	18	1	6	—	30
	80—81	8	22	5	6	—	41
	81—82	11	25	3	1	—	40
	82—83	5	32	1	1	—	39
Northern	79—80	6	31	37	—	—	74
	80—81	6	36	16	3	—	61
	81—82	8	34	18	3	—	63
	82—83	10	32	14	3	—	59
North Eastern	79—80	6	18	9	—	—	33
	80—81	7	21	10	2	—	40
	81—82	7	30	11	3	—	51
	82—83	4	6	6	1	—	17
Northeast Frontier	79—80	1	18	8	—	21	48
	80—81	2	18	4	—	37	61
	81—82	7	20	8	—	61	96
	82—83	4	24	3	2	96	129
Southern	79—80	3	26	9	1	2	41
	80—81	1	34	9	1	—	45
	81—82	4	27	5	—	1	37
	82—83	1	22	2	3	—	28
South Central	79—80	2	25	6	3	4	40
	80—81	3	35	6	1	5	50
	81—82	3	37	11	3	2	56
	82—83	3	21	9	2	8	43
South Eastern	79—80	11	61	12	—	—	84
	80—81	8	67	11	2	—	88
	81—82	9	80	7	2	—	98
	82—83	8	54	6	2	—	70
Western	79—80	2	28	22	3	—	55
	80—81	5	25	9	4	8	51
	81—82	1	24	6	3	4	38
	82—83	3	11	14	—	2	30
Light Railways (Futwa Islampur & Dehri Rohtas).	80—81	—	2	1	—	—	3
	81—82	—	5	2	—	—	7
	82—83	—	—	—	—	—	—

APPENDIX—'G'

Cause-wise analysis of 311 accidents falling under Section 83 of the Indian Railways Act into which Departmental Enquiries were held by Railway and the proceedings of which were sent for review to the Commission of Railway Safety.

Derailments

1. Total	220
2. Failure of Axles/Journals/Roller bearings	24
3. Failure of Suspension/Bogie components	115
4. Failure of Brake-gear	5
5. Failure of Tyre/Wheels	10
6. Failure of Coupling Apparatus	2
7. Failure of/Defects in Permanent way	39
8. Mismanipulation of Trains/Excessive Speed	31
9. Incorrect setting of points by station staff	15
10. Sabotage of track/obstruction placed on line	35
11. Miscellaneous (Faulty Loading, Maintenance, Defects in Locomotives/Rolling Stock, Improper marshalling, Animals on line, etc.)	44

Collisions

1. Total	25
2. Train driven past Signals at Danger	6
3. Reception on clear Signals on occupied line	—
4. Trolley/Lorry not protected	1
5. Failure of station staff	5
6. Failure of Guards	—
7. Failure of Driving Staff	9
8. Miscellaneous	4

Fires in Trains

1. Total	9
2. Electrical Defects	1
3. Malicious interference/Passengers carrying inflammable materials	4
4. Battery Box coming in contact with live cinder	—
5. Miscellaneous	4

Collisions at Level Crossings

1. Total	57
2. Road Vehicles driven carelessly	50
3. Failure of Gateman	5
4. Miscellaneous	2

APPENDIX 'H'

Brief particulars of some accidents under Section 83 of the Indian Railways Act, enquired into by Railway Administrations.

Nature of Accident	Cause	Casualties		Cost of damage	Recommendations
1	2	3	4	5	6
Collisions					
1. DD/414 Goods train collided with the Motor trolley between Baraguhalu and Chimdipalli stations of Waltair Division on S.E. Rly on 28-3-82.	Due to the train running past Home & departure signals of Baraguhalu stations at danger. This happened as a result of excessive speed attained by the train, caused by inadequate brake power arising out of the rear angle cock on the air brake pipe of the 10th vehicle from the engine and at the same time air pressure from control reservoirs and train pipes in rear of this vehicle having been released completely.	—	—	Rs. 10370000/-	(i) It is recommended that a more sturdy and fool proof design of the guage which will withstand the impact of heavy oscillation be evolved. The RDSO and some renowned manufacturers of gauges may be associated for this purpose. It is further recommended that senior competent officer be deputed for a few months exclusively for this job, so that the problem can be studied in depth from all angles and actively pursued. (ii) Handle of angle cocks on wagons should be removed and safer methods devised to prevent easy accessibility for unauthorised/inadvertent operation. (iii) Provision of air operated buzzer in Guard's brake-van. (iv) (a) Modification of speed changing device. (b) Periodical check of the Register for recording the digit changes on the video counter by DTI/Signal Inspector. (v) Design of catch sidings on K.K. Section be studied in depth and action taken for improvement. (vi) (a) Counter signature of Guard on the B/Power certificate before starting a train from Koraput. (b) Correction slip to G&SR for testing the air pressure and standard proforma for vacuum certificate recommended.
2. 127 Dn. Bilaspur-Nizamuddin Exp. collided with Shunting Engine No. 9667 at Itarsi station of Central Railway on 6-4-82.	The reason of this collision was due to disregarding of shunt signal No. 79 by the shunter and failure on the part of panel operator to put the point No. 285 to normal after admitting the rake of 391 Dn in washing siding.	—	—	2500/-	(i) All unsignalled moves should be banned. The difficulties in the yard which may be compelling the staff to resort to such unsignalled moves, should be studied in detail and suitable action taken. In fact, for provision of additional shunt signals, reference has already been made to Hqrs. However, it is reiterated that unsignalled moves pending additional facilities should not be permitted under any circumstances and defaulting staff drastically taken up.

1	2	3	4	5	6
					(ii) Immediate steps should be taken to arrange for adequate trained men for working as Panel Operators/Panel I/Cs and Site ASMs. (iii) To avoid possibilities of such accidents in future, besides overshooting of shunt signals by drivers and Cabin ASM forgetting to normalise point No. 285, it is recommended that point No. 268 should come to reversed position only with the conditional interlocking that either Point No. 271 is reversed or Point No. 284 is reversed. This possibility should be examined. (iv) It was seen that the rakes entering into the washing siding are having more vehicles than the capacity of the washing siding. On occasions, when these rakes are taken into washing siding, they have to infringe the line and the vehicles are to be stabled beyond shunt signal No. 79. This is highly unsafe leading to unsignalled moves. In order to avoid this, it is suggested that either washing siding may be extended towards BB end or the line of Derailing Switch No. 285 may be extended so that space is available.
3.	356 Up Pass. and 5-NKJ SPL goods train on Jhansi-Bina Section on C. Rly. on 2-9-82.	The reason of this collision was due to ASM, without ascertaining that the Up Main line on which 356 Up was standing was set for Bina and that the concerned facing point of the route was clamped and pad locked, issued T32B to the Driver of 356 Up Passenger, as the advance starter was defective since the route set for 5 NKJ Up goods train which left Agasod station earlier had not been reversed the passenger train after starting from the station collided with the rear of the goods train. (Rly. staff held responsible).	(a) (b) (c) (d)	23 — — 23	24500/-- (i) Point No. 10 & 11 should be interlocked with the slot of Home signal so that it can be ensured before releasing slot by (A) Cabin of Up main Home signal 10 and 11 are set towards Bina side. Since all the trains towards NKJ via Rly. fly-over are stopping for caution order, this will not affect operations adversely. (ii) Block instrument between Agasod to Karod should be shifted to (A) Cabin and instead of Switchman working in 'A' Cabin, one SASM and leverman can be posted for better safety. This will also enable setting of points as well as issuing T 32 B at the same place which is necessary because Agasod is a Junction Sataion and controls movement in three directions from 'A' Cabin. (iii) Since CSR between Karod Down outer and point No. 37(A) of Agasod is only 610 meters, it cannot accommodate full train load of 75 four wheeler wagons. However, if Signal is converted to Upper quadrant than full train load can be accommodated between Down Home Signal of Karod and point No. 37 A of Agasod station.

1	2	3	4	5	6
4. 2 PL Pass. and SBC(F) Special between Ambala City-Ambala Cantt. stations on N. Rly on 4-9-82.	(i) Failure of Driver of 2 PL to observe GR-277 before passing the signal. (ii) Failure of ASM who incorrectly issued OPT-373 misguiding the driver.	—	—	82,000-	(i) Use of starting order on Form OPT-30 which is compulsory requirement as per GR, should be introduced at the station for starting trains from non-signalled lines. Also issue of OPT-373 for semi-automatic signals showing red and whose 'A' marker light is lit should be stopped. (ii) Specific time limit should be laid down on lines of SR 125/6 after which the guard must take action to protect the rear of his train in accordance with GR 280(2).
5. Collision of 1 GHN with light engine which collided with 13 Up at Delhi-Shahdara A Panel on N. Rly. on 4-10-1982.	Excessive speed.	—	—	Nil.	Relocation of the home signal of Delhi-Shahdara East Panel 'A' to be considered. Staff against whom enquiry proceedings are pending in a case involving safety should be debarred from train passing or train running duties during the pendency of the inquiry proceedings.
6. Electric Multiple Spl. Goods collided with Dn Multiple Spl. Goods on Sini-Kandra B.G. Sec. At KM392/S-8-S-4 SER on 14-10-82.	Due to non-observance of GR 277(1&2) & GR 279 by the driver of M/E Manoharpur-Burnpur Spl. Goods train.	1	2	1,50,000/-	
7. 158 Dn. Exp. & Motor Car No-DHE-4494 between Ghaziabad and Mahrauli stations on N. Rly. on 11-1-83.	Negligence of Car driver.	1	—	Nil.	The gate has been manned as recommended by the inquriy committee.
8. 260 Down Pass. collided with B/Van of Down Garhara Spl. between Kadipur and Rajwari stns. on N.E. Rly. on 12-12-82.	260. Dn. Pass, collided with B/Van. No. 2126 WR of GHZ Spl. which was leftin Block Sec. due to parting of Dn. GHZ Spl. which has gone ahead.	1	—	8,300/-	(i) Improve Brake Power. (ii) Provide proper arrangements for fitting vacuum gauge in goods Brake Vans. (iii) Counsel Stn. Staff to obey Rules on "Complete Arrival" rigidly.
DERAILMENTS					
9. SH-1 Up Goods train at Sakleshpur station on Sakleshpur-Hassan M.G. Sec. S. Rly on 17-4-82.	Negligence of Driver of the Goods train.	1	5	1,00,000/-	
10. 544 Up Parcel train between Chalisgaon and Hirapur Stn. Central Rly. on 10-5-82.	Failure of Railway Staff.	—	—	4,560/-	(i) As far as possible the heavier vehicles should be marshalled next to the engine and lighter vehicles at the end. (ii) The speed restrictions while approaching the Neutral zone should be relaxed expeditiously as far as possible.
11. Down Multiple Elec. Banspa ni-Adityapur Crack goods at Dn. Home signal of Maluka Stn., S.E. Rly. on 11-5-82.	Negligence of Driver of the Goods train.	—		2,25,02,000/-	
12. 24 Bangalore City Madras Exp. while entered on Rd. 4 of Sholinghur station on Jolarpettai-Arakkonam Jn. S. Rly. on 1-7-82.	Sudden breakage of the tip of the tongue rail due to inherent old flaw of the metal.	—	—	34,250/-	(i) Schedule should be laid down for ultrasonic detection of flaw in tongue rails as well as stock and lead rails of turnouts also so that inherent flaws can be detected and preventive action taken well in time.

1	2	3	4	5	6
13. Up KP Double headed Goods train was on run between Ghatnandur and Parli Vaijnath stations on Vikarabad-Parli Vaijnath BG section, on 5-7-82, 11 Box wagons and a B/Van being 30th to 41st vehicles derailed between TP 260/11 and TP 261/2. All except the B/Van capsized and were thrown off, some of them deep down the embankment. As the train was moving at a speed much more above the permissible speed of this section, the front portion of the train consisting of 2 WDM 2 locos and 29 Box wagons continued to run and had a further derailment of 20 vehicles (10th to 29th from the engine) between TPs 265/2 and 265/15. The two engines at the front with the first 9 vehicles proceeding further at highspeed reached Parli Vaijnath Station, the Driver not being able to control the train, disregarded the Outer/Home signals at danger and collided with the standing Goods train on line No. 3. As a result of the collision the debris affected the standing passenger rake of 348 Dn. on the Main line, damaging three coaches, 3 Box wagons next to the train engine capsized and mounted on to the loco and on to the platform. Only six wagons were on the line on which the train entered the stn. yard.	Excessive speed	—	—	71,98,300/-	
14. SL-531 Down goods train on Chandil-Anora B.G. double line at Tamna stn. on S.E. Railway on 26-8-82.	Mech. failure.	—	—	7,02,500/-	(i) At number of places in the train, J.C. bolts were either deficient or improperly secures. Since these lead to unsafe conditions proper securing of these nuts should be ensured. (ii) At few locations nuts welded on top of MS rods are found to be used as improvised J.C. bolts. Since due to weld failure such bolts are likely to work out while on run and thus cause unsafe conditions, only standard J.C. bolts with forged heads should be used.
5. A-38 Up EMU local train at Matunga stn. on Central Rly. on 31-8-82	Failure of Railway staff.	—	—	1,400/-	(i) The Existing bush on the rear side to be replaced with continuous/chain welding. The broken worn-out bushes to be replaced during Schedule/POH. complete specification of bolt and nut to be reviewed so as to withstand various forces on run at a speed of 75 to

1	2	3	4	5	6
					100 KMPH and should be able to withstand total weight of 70 to 75 Kgs. weight of suspension box. (ii) It is felt breaking of the bush/nut alongwith bolt is due to application of force/vibration/track condition, specification of material should withstand above aspects as train is passing many crossover Up and Down gradients to the extent of 1 in 40 & curve on run.
16. K/30 Up double headed goods train on Itarsi-Amla section at Dharakhoh Stn. on Central Rly. on 25-10-82.	Failure of Railway staff.	—	4	7,60,000/-	
17. DD/148 goods at Tyada on Kirandul-Kottavalasa of Waltair Div., SE Rly. on 6-11-82.	Negligence of Driver and Excessive speed.	—	—	6,50,000/-	(i) Catch sidings are to be strengthened to make them fit for averting runaway trains. (ii) Testing of air pressure in the brakevan must be done by Guard and all stations where the train is stopped and the pressure recorded in their T-34HF journal.
18. WAT Special Dn. goods train between Nayudupeta and Pedappariya stations on SE Rly. on 16-11-82.	An iron rod which found its entry at Vijayawada during repacking on 7-11-82, cut the journal and caused derailment.	—	—	2,87,000/-	
19. BBC-7 goods train between Tatisilwai & Gangaghat Stn. on SE Rly. on 27-11-82.	Due to Shifting of load in wagon (Open) causing shearing off the wall of the wagon and contents dropping off resulting in uneven loading obstruction and derailment.	—	—	4,87,000/-	
20. DD/318 goods train between Boddavara and Shrungavarapukota Waltair Div., SE Railway on 24-11-82.	Due to Mechnaical defect.	—	—	5,50,000/-	A speed sensing device should be provided at the Boddavara slip siding point in order to control the speed of the Dn. trains to 15 Kmph as they negotiate the Boddavara slip siding point which has permanent speed restriction of 15 Kmph.
21. 202 Up Panchavati Express at Kalyan on Kalyan-Bombay VT section on C. Rly. on 27-11-82.	Failure of Railway Staff.	—	—	20,150/-	(i) Finalisation of guide lines for various service clearances to be maintained during the different schedules which electrical

1	2	3	4	5	6
					locomotives undergo at the shed by associating RDSO if considered necessary. (ii) Introduction of Joint checks by the Kalyan Loco shed and Parel workshop representatives at the time of out-turn of locomotives after mechanical POH at Parel workshop. (iii) CME & CEE to lay down the clearances that will have to be secured on POHed locomotives without the electrical equipment being mounted inside.
22. 544 UP Crack Down goods train at Kanjikode Stn. on S.Rly. on 8-12-1982.	Mechanical defects.	—	—	21,71,692·50	—
23. UP DC 982 G2B Spl. goods between Baruna & Buxar stns. on Danapur Mughalsarai Sec. Danapur Div. E. Railway on 17-12-82.	Due to hot breakage of journal.	—	—	18,20,000/-	—
24. 507 UP link Express at Malhaur Stn. N. Rly., on 1-2-83.	Failure of Railway Staff	—	—	75,860/-	(i) Out of two, one generator should be in working order and it should be ensure that this is started without any loss of time. (ii) An independent electric connection should be provided at Malhaur station. (iii) Distribution and supply of safety stores needs to be put on proper footing.
25. EC86 Dn. goods train passing Ismailpur stn. on Mughalsarai Div. on Eastern Railway on 6-3-83.	Mechanical failure.	—	—	3,37,000/-	—
AT LEVEL CROSSINGS					
26. Dn Diesel goods train was on run between Gangadham and Gonda Jn.—on Nanpara-Gonda section of Lucknow Div. dashed against Mini Bus on N.E. Railway on 17-11-81.	Failure of Gateman	—	6	—	Upgradation to 'A' Class,
27. Engine of 6 LJ Pass. collided with a Car between Kup and Malarkotla stns., Northern Railway on 7-4-1982.	Due to negligence of motor driver.	2	1	Nil	Manning of this Level Crossing has been recommended.
FIRES					
28. 1 ATN pass between Chamrola and Jalesar Rd., stn. Allahabad Div. N. Railway on 7-7-82.	Due to careless throwing of Cigarette/Bidi ends on the loose coir jute by passenger.	—	—	97,000/-	In passenger trains like 1 ATN the I class coaches should be provided with coach attendent-conductors for safety from unauthorised travellers/miscreants.

1	2	3	4	5	6
29. RA-62 attached to 13 Up at Kanpur stn. on ALD. Div. on N. Railway on 7-7-82	Due to electrical short circuitry or inadvertently throwing of burning cigarette or bidi ends.	—	—	6,82,000/-	(i) In order that no time is lost in informing the Fire Brigade, a list of Railway/Civil Fire Brigade stations must be available in the control office, stations and the Security Control Room at the Divisional headquarters with telephone numbers, to ensure expeditious summoning of the fire services when required. (ii) There should be provision for Fire Hydrants at important railway stations, so that water is made available to the Fire brigades to extinguish the fire, if any, not only at the station but also to enable them to fill their water tenders from these fire hydrants to combat a fire in the section. (iii) A full-fledged mobile fire station should be opened in each Divisional Headquarters. (iv) The Train Lighting Staff did not know much about the work of A.C. alternators and regulators fitted in the Inspection Carriage ; they had not been imparted any training in this connection. It is necessary that whenever a new equipment is installed, all the staff concerned are properly trained and that suitable training facilities are created before such equipment is actually brought into Commission. (v) The Enquiry Committee has expressed that section controllers are apparently occupied only with the running of trains but are not conscious of safety. This is something which merits serious attention of the Railway Executives. In any case ASMs/SMs should be clearly instructed not to wait for the section Controllers' orders in such emergencies like out-break of fire on a train and that they themselves should take initiative to stop the train concerned by using any of the means available with them (Tney should also

1	2	3	4	5	6
					take all possible steps to isolate the source of fire and extinguish it). They should permit further movement of the train involved only after making sure from a thorugh examination in company with the Driver and Guard that it is safe for the train to proceed onward.
30. Diesel VCE Spl. goods train on Kharagpur-Waltair, Khurda Rd. Div. on S.E. Rly on 2-9-82	Leaking of Petroleum which came into contact with a burning substance on the run.	—	1	2,11,000/-	(i) Tank wagons carrying petroleum or other inflammable goods should be in good condition and free from leakage. (ii) Empty tank wagons subjected for loading at loading points should be offered for examination of the valves and security plates prior to loading.
31. 557 Up Pass. arrived at Orwara stn. on Gorakhpur Jn. single line B.G.- N.E. Rly. on 17-2-1983.	Inflammable material carried by passengers.			95,406/-	

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